

D R U G K N O W L E D G E O F S T U D E N T S A T
T E X A S W O M A N ' S U N I V E R S I T Y

A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF SCIENCE IN CHILD DEVELOPMENT
AND FAMILY LIVING IN THE GRADUATE SCHOOL OF THE
TEXAS WOMAN'S UNIVERSITY

COLLEGE OF
HOUSEHOLD ARTS AND SCIENCES

BY
LYNELLE C. HALE, B. S.

DENTON, TEXAS
DECEMBER, 1971

Texas Woman's University

Denton, Texas

December 6, 1971

We hereby recommend that the thesis prepared under
our supervision by Lynelle C. Hale
entitled Drug Knowledge of Students at
Texas Woman's University

be accepted as fulfilling this part of the requirements for the Degree of

Committee:

Dora R. Tye
Chairman
Lee O. Best
Robert Kettlefield

Accepted:

Mary Evelyn Huey
Dean of Graduate Studies

A C K N O W L E D G M E N T S

The author wishes to express sincere appreciation to those who have given guidance and assistance in the completion of this study.

To Dr. Dora R. Tyer, Professor of Child Development and Family Living, for her warm personal interest, encouragement, and sincere assistance in the writing of the thesis.

To Dr. Robert P. Littlefield, Assistant Professor of Education, and to Dr. Emma Lee C. Doyle, Assistant Professor of Child Development and Family Living, for their assistance in editing this study and serving on the graduate committee.

To several members of the College of Health, Physical Education, and Recreation: Dr. Donald J. Merki, Associate Professor of Health, Physical Education, and Recreation, for inspiration and assistance in planning the study; Dr. Anne Schley Duggan, Dean of the College of Health, Physical Education, and Recreation, for granting permission for students in that department to serve as the study sample; the graduate assistants in charge of the participating classes for kind cooperation; and to the participating students for providing data for this study.

To her family: her husband, Jeffrey Hale, for professional assistance in editing the study, as well as unending patience and encouragement while the study was in progress; and her daughter, Wendy, for her cooperation and patient understanding.

T A B L E O F C O N T E N T S

Chapter		Page
	ACKNOWLEDGMENTS.	iii
	LIST OF TABLES	vi
I	INTRODUCTION	1
	Drug-Related Studies.	4
	Factual Review of Drugs	14
	Terminology	25
	Purposes.	26
II	PROCEDURE.	28
III	PRESENTATION AND ANALYSIS OF DATA.	35
IV	SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS. .	50
	SELECTED BIBLIOGRAPHY.	55
	APPENDIX	58

L I S T O F T A B L E S

Table		Page
1	SOURCES OF DRUG INFORMATION OF 200 UNIVERSITY STUDENTS.	40
2	STUDENT DRUG USE	42
3	NUMBER OF PERSONS STUDENTS KNOW WHO HAVE USED DRUGS.	43
4	STUDENT REACTIONS TO DRUG-RELATED STATEMENTS	47

CHAPTER I

I N T R O D U C T I O N

The adolescent of contemporary society faces the complex developmental task of establishing personal identity. Confronted with fundamental decisions, and, often, with preoccupied parents, some young people have turned to the use of drugs either to aid in the search for "finding" themselves, or to escape from that responsibility. No one can deny that drug usage is having a significant impact upon the individual and the family of today. Increased awareness by Family Living educators appears imperative in order to realistically meet the needs of the modern family.

The present study was primarily concerned with knowledge of drugs, the attitudes toward drugs, and the personal contact with drugs among Texas Woman's University students. The results of this study will hopefully provide a more updated preparation for college educators to effectively deal with young people who are confronted with decisions involving the use of drugs.

Some professionals working with the problem of drug abuse agree that family life is a very significant factor

in solving the problem. Louria (17), author of The Drug Scene, stated that

Both in the ghettos and in the affluent suburban communities of this country, the deterioration of the family may explain many of the ills of our society. For here, perhaps, is the primary American tragedy of the twentieth century. . . .

According to Louria, families have given up the basic function of educating the children, and teachers have not proven to be an adequate substitute for parents. Discipline in the schools has suffered a tremendous downfall. The writer cited above continued that

Even if the school and the teachers can maintain discipline and can effect the education for which the parents have relinquished responsibility, those children who grow up in broken or unhappy homes are at great disadvantage. They have no pride in their family to fall back on, no parental unit to advise and support them and, equally important, no established parental guidelines, so that the boundaries between right and wrong, between wants and needs, are blurred, making them more susceptible to the bandishments of the drug cult. When a user or proselytizer of drugs urges them to try marijuana or LSD, they are less likely to feel that they should refuse because their parents would not approve. There can be no other influence as important in the development of an individual as the family unit; yet we as a society, with an insouciance that is absolutely appalling, are allowing that unit to continue its progressive deterioration.

At least one research study linked family problems to drug abuse. Chein and others (7) reported results of a study in The Road to H. Summary findings were that in deprived areas 97 per cent of young heroin users indicated a disturbed relationship between parents, as evidenced by separation, divorce, open hostility, lack of warmth, or lack of mutual

interest.

Another study conducted by Robinson (25) at the University of Maryland connected a poor family background to marijuana smoking. Thirty-four high school girls were used for an in-depth psychological study. Half the participants were marijuana users and half were not. Smokers reported grossly unsatisfactory childhoods, while the non-smokers claimed general satisfaction. "The smokers were found to be girls who moved into peer group relations to find the satisfactions lacking in their primary groups (families) and to find security as they coped with their identity crisis."

There are signs that progress with the problem of drug abuse is being made, according to Barbour's report printed in the North Texas Daily (21). A Bureau of Narcotics and Dangerous Drugs lawyer stated, "I think we're going to see a peak, or we've already seen it, in drug usage and in the controversy." A National Institute of Mental Health expert affirmed that "The real progress will come in the 1980s. The 1970s will be the action decade, cementing what we have discovered in the 1960s." Experts seem to feel that the present generation of children is growing up with an awareness of the effects of drugs. Barbour (21) reported that surveys are beginning to indicate a decline in the use of all illegal drugs except marijuana.

Drug-Related Studies

With the current emphasis on our society's drug problem, many surveys have been undertaken to measure student drug use. Relative to the number of drug-use studies reported in the past decade, fewer studies have been concerned with student knowledge of drugs and student attitudes toward drugs.

Leonard (16) studied knowledge of LSD among adolescent girls in Syracuse, New York. Findings indicated that knowledge was not significantly related to age, socio-economic status, family size, or geographic location. The investigation cited above demonstrated that mass media is the most significant source of information. Either the family does not have reliable knowledge of hallucinogens or may be unable to communicate accurate drug knowledge to teenage daughters.

An instrument frequently used in drug knowledge studies is "A Drug Knowledge Inventory" developed by McHugh and Williams. Moskin (20) quoted McHugh as saying that in analyzing over 2,000 test results, the "scores are just above chance scores." Teachers who had enrolled for a drug seminar and had an above-average interest in the subject reported the highest scores of any group tested, just above the scores reported by ministers. College students ranked in the middle position of the five groups tested. Air Force recruits were slightly above high school students in their score reports. Even though people

seem to be better informed about hallucinogens than they are about barbiturates or narcotics, there is still an indication of much misinformation concerning hallucinogens.

During the summer of 1971, three doctoral studies dealing with a general knowledge of drugs were completed at Texas Woman's University and North Texas State University. Using "A Drug Knowledge Inventory" to obtain information, Jones (14) studied 741 high school students in New York. Urban students in the study showed a somewhat higher average drug knowledge score than the national norm established for the instrument. The students were more informed about hallucinogens and marijuana than they were about the other drugs. Tomlinson (27) reported that experienced teachers of the Denton, Texas, geographic area were more knowledgeable than student teachers or public school students, according to the "Drug Knowledge Inventory" and a questionnaire identifying "street" vocabulary often associated with drugs and drug misuse; however, when the groups were asked to identify pictures of selected drugs by "street" terminology, teachers revealed fewer correct responses than did urban junior high school students and rural secondary school students. The junior high school respondents in one of the rural school systems had the lowest mean score. The third study used an adaptation of "A Drug Knowledge Inventory." Brown's (6) recent investigation in the Dallas area concentrated on attitudes toward selected drugs, knowledge

of drugs, and the relationship between drug attitudes and drug knowledge. Subjects studied were urban public school students in grades five through twelve. Study findings revealed more negative attitudes toward various types of legal and illegal drugs among elementary students as compared to junior and senior high students. The subjects in the study tended to place cigarettes, alcohol, and marijuana in one group, and LSD, heroin, and methedrine in a second group. The mean scores on the drugs in the first group tended to indicate more positive attitudes than toward drugs in the second group. The standard deviations on drugs in the first group tended to be larger, indicating a wider dispersion of attitudes than on drugs in the second group. There was a definite progression of knowledge, beginning with the upper elementary group and continuing through the senior high group. The results showed that drug knowledge reached a plateau at the tenth grade. When attitudes and knowledge were correlated, there was a significant negative relationship between negative drug attitudes and accurate drug knowledge in the junior and senior high school groups. In both groups, there was a tendency for students who expressed relatively positive drug attitudes to score higher on the knowledge test than other students. Study implications were that possession of factual information about drugs does not insure negative drug attitudes, and that programs which seek to develop negative attitudes toward drugs should include more than the presentation of factual information.

Horman (12) completed a study of attitudes about drugs and drug abuse by undergraduates, graduate students, and university staff members in preparation for the establishment of a drug education program at Temple University, Philadelphia. Although the Horman study did not inquire about personal drug use, over 75 per cent of the subjects knew one or more drug abusers, and 15 per cent of the subjects knew ten or more abusers. When questioned about the personality of the drug abuser, many students refused to state an opinion dealing with personality. However, a majority of the subjects felt that drug abusers were alienated from society and that they have some emotional problems. Almost 100 per cent of the subjects believed that the college student should be made aware of the dangers of drug abuse.

Researchers have conducted rather extensive studies of drug use, many of which were sponsored by the National Institute of Mental Health. Berg (1) compiled a report of studies, surveys, and polls for the Bureau of Narcotics and Dangerous Drugs. The Berg compilation encompassed studies of illicit drug use among students in fifteen colleges and universities, including one medical school, twenty senior high schools, and one junior high school. Additional statistics from a nationwide survey of college students as well as studies of selected graduate students, hippies, and adults were also presented. The majority of the college studies were conducted in the West,

and it is difficult to generalize the statistics on illicit drug use to all students in the United States.

Horman and Fox (13) surveyed the use of marijuana among college students and found that approximately 20 per cent of the college students questioned reported some experience with marijuana. Cory (8) stated that Yolles, Director of the National Institute of Mental Health, estimated a higher percentage. Yolles suggested that by the time adolescents become college students, some 25 to 40 per cent had at least experimented with marijuana. The National Institute of Mental Health (23) recently published an estimate that 35 to 50 per cent of high school and college students have tried marijuana at least once; however, only 10 per cent of these students were considered to be chronic users. Studies reviewed by members of the Bureau of Narcotics and Dangerous Drugs (9) showed that in recent years the highest percentage of student drug use was 31 per cent reported by high school students on the West Coast. Generally, males showed a higher percentage of use than did females. Berg (1) reviewed several studies which surveyed the use of marijuana by college students. A survey of over 2,000 members of the student body at Ithaca College reported that 17.5 per cent of the females as compared to 28.9 per cent of the males had used marijuana. Perlman studied seniors from Brooklyn College of the City University of New York and reported that 4.2 per cent stated they had used marijuana and 2.5 per cent indicated they used it frequently. Of these percentages, about half were males

and half were females in both categories. The University of California at Los Angeles Student Legislative Council sponsored a student referendum and reported that of the 9,281 students who voted, 34.9 per cent had used marijuana. However, the proportion of the students voting was considered to be too small to give a reliable estimate of the drug use at this university in 1967. The Student Health Center at the California Institute of Technology mailed questionnaires to the student body with a 90 per cent return. The resulting percentage for students having used marijuana was 13.7 per cent. Well over half the students reporting use indicated three or more times as opposed to once or twice. One of the smallest percentages reported (5 per cent) was a result of a very small nation-wide survey of college students conducted by the American Institute of Public Opinion for Reader's Digest.

Blum (3) directed extensive research on drugs under National Institute of Mental Health grants. Reported results of a five-campus study of student use of illicit as well as socially approved drugs showed that percentages of students having ever used marijuana ranged from 10 per cent in a state university to 33 per cent in a state college. The private university and the junior college surveyed both reported 21 per cent, while the Catholic university reported 11 per cent.

Suchman (26) conducted a drug-use study among 600 students at a West Coast university. The major independent

variable was the degree of adherence to the "hang-loose" ethic. This ethic was described as a disillusionment and repudiation of the "Establishment." He found, among the students tested by questionnaires and interviews, a high correlation between marijuana use and the "hang-loose" ethic. Another discovery was that the use of drugs varied significantly by sex, social class, marital status, and religion. Males were almost three times as likely to use marijuana regularly as were females; upper income groups twice as likely as lower income groups; single students four times as likely as married students; and Atheists and "other religious affiliations" reported much more use than Protestants, Catholics, and Jews. No differences were found by age, year in college, birthplace, or current marital status of parents.

According to the government publication Recent Research (23), studies on the use of LSD tend to be somewhat more consistent than marijuana-use studies. In surveys of LSD use in several college populations, 5 per cent of the students polled admitted to using the hallucinogen with a range of 2 to 9 per cent among individual colleges. Horman and Fox (13) found that LSD users tend to be "experimenters" with only 30 per cent of the users reporting chronic use. Berg (1) reported varying percentages of LSD use among students. According to the American Institute of Public Opinion's nation-wide survey of college students, only 1 per cent had ever used LSD. However, more specific studies tend to report higher percentages

of use. A 5.5 per cent usage was reported from the Student Health Center's survey at the California Institute of Technology. The University of California at Los Angeles student survey resulted in a percentage of 6.9. A random sample survey of undergraduate and graduate students at California State College at Long Beach resulted in 6 per cent of the sample reporting LSD use. Studies surveying high schools indicated a much higher percentage of LSD use among high school students than among college students. A survey of juniors and seniors of the three high schools in Castro Valley, California, reported that 8.7 per cent of the females and 15.4 per cent of the males had used LSD. Blum (3) conducted multiple studies involving the use of LSD by high school students. One study compared middle-class suburban students with lower-class and working-class students. The middle-class students showed 13 per cent of the females and 14 per cent of the males reporting use. In contrast, the second high school reported 4 per cent of the females and 5 per cent of the males.

Blum's (3) five-campus study of college students researched the use of hallucinogens as a group (excluding marijuana). The resulting percentages of use ranged from 2 per cent to 9 per cent, probably providing the percentages quoted in literature published by the National Institute of Mental Health. The highest percentages of use occurred at a state college, while the lowest percentage was reported at a state

university and at a Catholic university. Rand surveyed Ithaca College asking about use of hallucinogens in general. The report was that 1.5 per cent of the females and 4.8 per cent of the males had used hallucinogens. Although reports of LSD use vary, 5 per cent seems to be a reasonable estimate for college students.

Although little emphasis is placed on college student abuse of depressants, studies do show significant percentages of use. Berg (1) reported surveys of depressant use by college students. A survey of all seniors graduating from Brooklyn College of the City University of New York in 1965 reported only 0.8 per cent of the sample having used barbiturates. Rand's study of Ithaca College stated that 1.7 per cent of the females and 3.3 per cent of the males reported having used barbiturates. A percentage of 7.1 at the California Institute of Technology reported having used sleeping pills without a physician's directions. Blum's (3) study of upper-middle class suburban high school students regarding the use of sedatives and tranquilizers resulted in 6 per cent of the females and 4 per cent of the males having used these drugs.

According to Berg's (1) list of surveys, stimulant use reported among college students was much higher than depressant use. The study of Castro Valley, California, high schools conducted by Berkeley professors reported 17.7 per cent of

the females and 21.5 per cent of the males having ever used pep pills. The percentage quoted from the California Institute of Technology study is 11.1. Ithaca College students reported 7 per cent of the females and 14 per cent of the males having used amphetamines. Students in a medical school located in the Northwest were surveyed in 1964. Of these medical students, 26.9 per cent reported having used amphetamines without a physician's directions.

Reported opiate use among college students was rather limited in studies reviewed by Berg (1). In 1968, Ithaca College students reported on use of morphine and morphine-like compounds. The percentage for females was 1.7, and the percentage for males was 3.3. Blum's five-campus study showed a very low opiate use among college students at that time. The percentages reported never exceeded 2 per cent. From research evaluations, Blum (3) predicted in 1969 that the indicated intent of high school students to continue drug use would result in an upsurge of heroin users within the next few years. Reports are now validating his prediction. Newsweek (4) reported that ". . . in the past two years the official guess on the scope of heroin addiction alone--and not counting any other drug--has risen to 200,000, then 250,000, finally recently to 300,000 Americans." Statistics also show an increasing ratio of whites to blacks as well as a decline in the average age for discovered addicts from

thirty-five years of age in 1950 to twenty-three years of age in 1971. The President of the New York State Council on Drug Addiction concluded in the Newsweek article that heroin use is a natural result of the pot-and-acid culture. All the exaggerated warnings of marijuana and LSD have conditioned deaf ears to the legitimate warnings of heroin danger. A great number of heroin addicts are coming back from Vietnam within the past year. But even with the explanation of Vietnam, over half the addicts at Fort Bragg, North Carolina, who turned themselves in for treatment had never been to Vietnam. Many experts feel that we are presently having an epidemic of heroin addiction.

Factual Review of Drugs

Merki (19) classified drugs of potential abuse as follows:

- 1) hallucinogens, such as LSD, mescaline, psilocybin, and marijuana;
- 2) stimulants, such as cocaine and amphetamines;
- 3) hypnotic sedatives, such as barbiturates, tranquilizers, freon, and alcohol;
- 4) narcotics, or analgesics, such as heroin, codeine, Percodan, mepheridine, and morphine.

Horman (12) reported that marijuana is frequently considered as a separate category because its hallucinogenic properties are much milder than those of the other drugs in the

hallucinogenic category. Marijuana has also been classified erroneously as a narcotic under the state laws since 1932 as a result of Harry Anslinger's elaborate propagandist attack described by Brenner and others (5).

All marijuana comes from a plant scientifically named *Cannabis sativa* L., and more frequently called *Cannabis indica*, Indian hemp, or simply, hemp, according to Fact Sheets of the Bureau of Narcotics and Dangerous Drugs (9). The flowering tops of the plant are the most potent part. The leaves are less potent, and the stalks and seeds have little or no potency. According to Cory (8), marijuana as a market product is actually a preparation of black and brown flakes--the dried and powdered flowers, stems, and leaves of the female Indian hemp plant. Hashish is the concentrated resin collected from the top of the plant, and it is approximately six times more potent than marijuana. The chemically active ingredient in the plant is tetrahydrocannabinol (THC). This compound was first synthesized in pure form by an Israeli scientist working with the support of an American grant. Grown naturally, the strength of the chemical is dependent upon soil and climate conditions and is therefore very unpredictable. However, the development of the synthetic form will allow for the control of the drug's strength. More reliable research is now possible. In a long-term program, the National Institute of Mental Health (23) plans to develop sufficient quantities of the natural and

synthetic material to conduct research in its own laboratories and to supply independent researchers. The Institute is currently supporting psychological research using 200 marijuana users in New York.

The National Clearinghouse on Drug Addiction (24) described the need for research on the long-term physical effects of marijuana. Eastern studies of chronic users report a variety of physical ailments related to cannabis use. From 25 to 70 per cent of regular hashish users in two Eastern surveys reported some impairment in physical health caused by the drug. One study reported that 25 per cent of 2,300 men admitted to psychiatric hospitals were diagnosed as having cannabis psychosis. These studies are definitely not in agreement with findings in this country, and many Western authorities question the validity of the diagnoses made and the methodology of the studies.

Immediate effects of marijuana vary according to the mood of the person. Horman (13) stated that in studies conducted, reports were that fully 50 per cent of those who tried marijuana experienced no effects. Four possible factors might explain the lack of effect: 1) the agent may not have been potent; 2) frequently, effects are seen only after repeated use; 3) the expectation of the user has a significant effect on what he experiences; and 4) the social setting affects the user's response. The physical effects generally

occur in about fifteen minutes after marijuana is smoked, according to Cory (8). However, when it is eaten in food, effects may not come for two hours. The user may become impatient, eat more, and then receive a greater effect than he had expected. Cory stated that marijuana users reported

lightness in the head, feelings of total relaxation, peacefulness and serenity, some loss of bodily coordination, intensified sensory perceptions, and a distortion of time. Occasionally they note swings of mood between great joy and extreme anxiety, and hallucinations in which objects change shapes and colors or unreal visions appear. The known physical effects include increased heartbeat, hyperphagia (or mouth hunger, which makes users crave food and sweets), reddened eyes (but not dilated pupils; these are common among users only because the drug is so often consumed in darkened rooms), and reverse tolerance (the longer one smokes, the less it takes to "turn him on").

The National Clearinghouse for Drug Abuse Information (24) also reported such physical effects as lowering the body temperature, changing blood sugar levels, and dehydrating the body. Marijuana is not an addictive drug: physical dependence does not result, a tolerance is not developed, and withdrawal does not cause physical sickness. Many scientists do feel that a psychological dependence does develop among frequent users.

Much more research needs to be completed before conclusive statements can be made concerning the effects of marijuana. According to the North Texas Daily (22) article, the National Commission on Marijuana and Drug Abuse, set up by Congress, was charged with the investigation of all forms of drug abuse. Findings on marijuana will be released early in 1972. The executive director of the Commission said

that the members are proceeding with the hypothesis that drunks are a worse social problem than pot smokers.

The National Clearinghouse of Drug Abuse Information (10) described hallucinogens in the following manner:

Hallucinogens (also called psychedelics) are drugs capable of provoking changes of sensation, thinking, self-awareness and emotion. Alterations of time and space perception, illusions, hallucinations and delusions may be either minimal or overwhelming depending on the dose. The results are very variable; a "high" or a "bad trip" ("freak-out" or "bummer") may occur in the same person on different occasions.

The most potent and the most popular hallucinogen is LSD. Some other drugs in the category include mescaline from the peyote cactus, psilocybin from the Mexican mushroom, morning glory seeds, DMT, STP, MDA, and THC (the active chemical of marijuana). Lysergic acid comes from ergot, the fungus that spoils rye grain. In 1938, the Swiss chemist Albert Hoffman first converted lysergic acid into lysergic acid diethylamide (LSD). In 1943, he accidentally discovered its mind-altering properties. Merki (19) stated that the drug was first available to experimental research workers in 1950. In 1959, LSD black market operations were first established. Because of the growth of LSD abuse, Sandoz Pharmaceutical Company, the only legal commercial manufacturer, stopped production and turned over all existing supplies to the National Institute of Mental Health. Cory (8) concluded that as a result of research reported a few years ago connecting LSD use to genetic damage, use seemed to be declining. However, there has been no

conclusive evidence linking LSD to any type of permanent damage, and use seems to have increased again.

A very small amount of the drug taken in pills of various shapes and sizes may produce a "trip" lasting from eight to twelve hours. Four stages of the LSD experience have been identified by Merki (19):

1. Initial stage, which lasts from 1/2 to 3/4 of an hour after ingestion, is accompanied by slight nausea, anxiety, pupil dilation, and increased heart beat.

2. Second or "experience" stage lasts from 1 to 6 hours, and is that stage about which people are most familiar. It consists of delusions, hallucinations, and illusions. There is also a loss of orientation to time and space; motor coordination is impaired; and there is an array of free flowing ideas and loss of touch with reality.

3. Recovery, lasting for several hours and consisting of "waves of normality altering with waves of abnormality."

4. Aftermath, consisting of fatigue and tension during the following day.

A "flashback" is a recurrence of some of the LSD experiences days or months after the last dose. It can be brought on by physical or psychological stress, or by medications such as antihistamines, or by marijuana. Cory (8) stated that it is generally the chronic user rather than the experimenter who is affected by flashbacks.

LSD has given scientists much basic information about the nature of brain cell transmission, and how distortion of the chemical mediators of transmission can result in disruptive mental functioning. Experiments have tried to use LSD in

treating severe alcoholics, persons with certain character disorders, autistic children, and psychotherapy patients. At present, no medical usefulness has been found. Even Dr. Timothy Leary, a strong advocator of LSD, has recently been quoted by Cory (8) as having told students: "LSD is not for everybody. Perhaps fewer than 10 per cent of Americans are designed to become the astronauts of the consciousness. I want to warn you: it is a very powerful drug. Don't be pressured into taking it by your friends."

As described by the National Clearinghouse of Drug Abuse Information (10), stimulants are a group of drugs which increase alertness, reduce hunger, and provide a feeling of well being. They are used medically for suppression of the appetite and for reduction of mild depression. The most commonly used stimulants are amphetamine (Benzedrine - "bennies"), dextro-amphetamine (Dexedrine - "dexies"), methamphetamine (Methedrine - "speed," "crystal"), and cocaine. Stimulants can be taken orally, can be inhaled or "snorted" through the nose, or can be injected into the veins for more immediate and intense reaction. Stimulants are not considered to be physically addictive. However, tolerance does develop and withdrawal occurs with very large amounts of amphetamines. Small doses are psychologically habituating. The physical effects of abuse are increased heart rate, raised blood pressure, palpitations, dilation of the pupils, dry mouth, sweating, headache, diarrhea,

pallor, and appetite depression. Although amphetamines are taken by many people for increased alertness and energy, in Proceedings of the Rutgers Symposium on Drug Abuse (28), Cohen described a large problem consisting of adolescents who consume amphetamines today much as cocaine was used eighty years ago--for an orgasmic high. A fringe benefit of amphetamine use is the delay of ejaculation and orgasm.

According to the United States Government Fact Sheets (9), methamphetamine is similar to amphetamine, except that it has more central nervous system activity and correspondingly less effect on blood pressure and heart rate than amphetamine. An additional danger of infection and hepatitis results from methamphetamine use because it is frequently injected. Merki (19) described cocaine as a stimulant which differs from amphetamine in the following ways:

1. Cocaine is rarely used in medicine today compared to amphetamines
2. Cocaine is controlled through the Harrison Act (of 1914) while amphetamines are controlled by the Drug Abuse Amendments (of 1965)
3. There is tolerance with the amphetamines and none with cocaine
4. Cocaine is rarely abused today as opposed to amphetamines.

Wittenborn and others (28) reported Cohen as having said: "I consider that amphetamine abuse is more of a problem today than the use of LSD. This disorder is chronic and relapsing because of its attractiveness for the defeated, the alienated, and those who are unable to enjoy."

As is true with stimulants, sedatives provide an area of drug abuse that is difficult to control because of the abundance of legal drugs and the widespread use by all types of people. The National Clearinghouse for Drug Abuse Information (10) reported that people who have difficulty with insomnia or anxiety and stress can potentially become dependent on sedatives or some types of tranquilizers (Miltown or Equinil). Barbiturates are taken by some heroin users either to supplement the heroin or substitute for it because of less expense. Persons who take an excess of amphetamines sometimes use barbiturates to "come down." Some drug abusers take sedatives and stimulants simultaneously. Rather than neutralizing each other, the combination produces a euphoric feeling. Of the family of drugs known as sedatives, the best known are the barbiturates, according to the Resource Book for Drug Abuse Education (24). Barbiturates range from the short-acting, fast-starting pentobarbital sodium (Nembutal) and secobarbital sodium (Seconal) to the long-acting, slow-starting phenobarbital (Luminal), amobarbital (Amytal), and butabarbital (Butisol). The fast-starting drugs are the ones preferred by abusers. "Barbs" and "goof balls" are common slang terms. Taken in normal doses, barbiturates "mildly depress the action of the nerves, skeletal muscles, and the heart muscle. They slow down the heart rate and breathing and lower the blood pressure." A person who is addicted to barbiturates and is under the influence of a large dose will

generally exhibit the appearance of one who is intoxicated with alcohol, without the breath odor. Normal doses of barbiturates are not addictive, but excessive doses build a tolerance very quickly. Barbiturate withdrawal is considered the most dangerous type of withdrawal. It can sometimes cause death. Very close medical attention is required for safe barbiturate withdrawal. It may take several months for the body to return to normal.

The National Clearinghouse for Drug Abuse Information described narcotics in several publications (9, 10, 24). A narcotic is a drug that relieves pain and induces sleep. The category of drugs refers to opium and its derivatives. Morphine is the synthesized product of opium which has extensive medical use today as a pain reliever. Heroin is chemically altered morphine about six times stronger than morphine. There is no medicinal use for heroin in this country. Yet, it accounts for about 90 per cent of the narcotic addiction problem. Paregoric and codeine are also obtained from the juice of the poppy fruit; however, they are much weaker than heroin and are not frequently abused. Several synthetic drugs, such as Demerol and Dolophine, are also classified as narcotics. Although pure heroin can be as much as ten times stronger than morphine, the market product is "cut" or diluted with substances like milk sugar and/or quinine. By the time the drug is sold to the addict, the heroin content generally ranges from 3 to 10 per cent. The white heroin powder is usually

mixed into a liquid solution and injected into a vein (called "mainlining"). Taking heroin orally or by sniffing is done, but injection gives the most pronounced and rapid effect. The first emotional reaction is an easing of fears and worries. This is often followed by a state of inactivity bordering on stupor. Heroin is an extremely addictive substance, and physical addiction usually takes place after two weeks of regular use, although some say that it begins with the first dose. The period of time for withdrawal of an addict to be complete varies from two to six months. The peak period for heroin withdrawal is within twenty-four hours. Most of the severe symptoms disappear in about a week, although weakness and nervousness continue for a longer period of time. Merki (19) reported that the severe symptoms of heroin withdrawal are many and varied: "severe aches of legs and back, nervousness, anxiety, sleeplessness, dilation of the pupils, gooseflesh, yawning, runny nose, sweating, vomiting, diarrhea, increases in heart rate and breathing, and a generally depressed state."

Terminology

Defining the phrase "drug abuse" in specific bounds was a difficult undertaking. In Society and Drugs, Blum (2) has pointed out many of the problems involved. Abuse of a drug in one country may be sanctioned usage of the same drug in another country. Fort gives his definition of drug abuse as "regular, extensive use of a drug to the extent that it is

damaging to a person's social or vocational adjustment, or to his health, or is otherwise specifically detrimental to society." Although this definition is meaningful on a personal level, one cannot overlook the reality that in all countries, possession or use of some drugs is a criminal offense. Therefore, by law, any detected use is considered to be "abuse."

Merki (19) defined "drug abuse" as "the self administration of excessive quantities of drugs leading to tolerance, physical and psychological dependence, mental confusion, and other forms of abnormal behavior. It is also considered to be taking drugs for the side effects that they produce."

A sourcebook for California teachers presents a simplified definition which incorporates the legal aspect. In this reference (15), "drug abuse" is used to mean obtaining a drug illegally and self-administering it to "the possible detriment of the individual, or society, or both." This definition is chosen for use by this investigator because of its specificity and simplicity.

Purposes

The group providing the data for this study was composed of 200 Texas Woman's University students enrolled in Physical Education classes. Using two questionnaires, a survey was taken to determine knowledge, attitudes, and practices.

The purposes of the present study were to:

1. Explore the knowledge that Texas Woman's University students have concerning drugs and drug abuse;
2. Compare the extent of drug knowledge with age, socio-economic background, population of hometown, and nation-wide norms;
3. Investigate the kind and frequency of drug use on the campus of Texas Woman's University;
4. Compare drug use with drug knowledge, age, socio-economic background, religious activity, and happiness of family life; and
5. Determine student attitudes toward drug use.

CHAPTER II

P R O C E D U R E

The primary purpose of the present study was an investigation of the knowledge, attitudes toward, and use of illicit drugs on the campus of Texas Woman's University. During the fall of 1970, a pilot study was conducted using a sophomore-level Child Development class with an enrollment of 22 students. The criticisms and comments of the class members helped the researcher to structure the questionnaire into its final form. Permission was granted by the Dean of the College of Health, Physical Education, and Recreation for students enrolled in that department to serve as the sample for the study. During December, 1970, and January, 1971, the investigator personally administered questionnaires to 218 Texas Woman's University students enrolled in five different required Physical Education classes. Required classes were selected in order to assure a random sampling. The questionnaires were completed and returned during the first half of the class period; a discussion session generally followed at the request of the students. Eighteen of the questionnaires were discarded because of incompleteness.

Data were collected by means of two questionnaires. "A Drug Knowledge Inventory," developed and published by McHugh and Williams (18), was administered as the first instrument. The authors developed a trial edition after an extensive study of authoritative literature on addictive and habit-forming drugs. This trial edition was administered to 380 college undergraduates at five institutions and to 125 junior and senior high school students. The final instrument was developed from these results. National norms have been established and reported by the authors. The instrument cited above has recently been used exactly as it reads or adapted for use by three researchers: Brown (6), Jones (14), and Tomlinson (27).

The second instrument used to collect information for the study, entitled "General Information Sheet," was developed by the researcher. The first part was concerned with biographical information about each student. Socio-economic class was determined by the occupation of the chief income earner in the family. Hopke's Encyclopedia of Careers and Vocational Guidance (11) was used as a guide for establishing four categories of occupations. Other questions involved age, classification, population of hometown, happiness rating of family, and degree of church participation. The second part of the questionnaire requested that participants agree or disagree with 15 statements concerning drugs. Participants were also asked to reveal the sources of their drug information and to indicate

which sources were the most significant. The last part of the questionnaire reported drug use. Four drugs, marijuana, LSD, Methedrine, and heroin, were selected as representative drugs of possible student abuse. Participants were asked to indicate how many people they knew who had used each of the four drugs. Participants revealed whether or not they had personally used each drug and to what extent.

The "Drug Knowledge Inventory" was scored by hand with scores representing the number of correct responses according to the authors of the instrument. This number was then transferred to the "General Information Sheet." Occupations were coded for the computer. A computer card was punched for each of the 200 usable questionnaires, and the computer was used to analyze the results of the study. Frequency counts and percentages were tabulated for each question. The Pearson product-moment correlation procedure was used to show various relationships existing in the study. The drug knowledge score was correlated with age, occupation of chief income earner, and population of hometown. Use of marijuana was correlated with drug knowledge, age, occupation of chief income earner, participation in church functions, and happiness of family life.

A copy of the "General Information Sheet" is shown on the following pages. The "Drug Knowledge Inventory" can be found in the Appendix.

GENERAL INFORMATION SHEET

0.1-

0.3 _____ (Do not fill in)

0.4-

0.5 What is your age? _____

0.6 What is your classification in school?

- 1) _____ Freshman
- 2) _____ Sophomore
- 3) _____ Junior
- 4) _____ Senior
- 5) _____ Graduate

0.7-

0.8 _____ (Do not fill in)

0.9 What is the occupation of your father? _____

1.0 What is the occupation of your mother? _____

1.1 Check the category which describes the population of your hometown:

- 1) _____ below 500
- 2) _____ 500 to 9,999
- 3) _____ 10,000 to 49,999
- 4) _____ 50,000 to 99,999
- 5) _____ 100,000 to 499,999
- 6) _____ 500,000 or above

1.2 How would you rate the happiness of your family?

- 1) _____ very happy
- 2) _____ generally happy
- 3) _____ unhappy
- 4) _____ very unhappy

1.3 How would you rate your participation in church functions?

- 1) _____ very active
- 2) _____ moderately active
- 3) _____ inactive
- 4) _____ never attend

1.4-
2.8

By each of the following 15 statements, place a check mark in the column at the right of the statement which best expresses your attitude.

SA = strongly agree
A = agree
NO = no opinion
D = disagree
SD = strongly disagree

	SA	A	NO	D	SD
1.4 The use of marijuana should be legalized.					
1.5 The penalty for marijuana possession should be lessened.					
1.6 The penalty for selling marijuana should be lessened.					
1.7 More research should be completed before a decision is made about legalizing marijuana.					
1.8 The use of LSD should be legalized.					
1.9 There is a difference between illegal use of drugs and abuse of drugs.					
2.0 Drugs can be used to increase creativity.					
2.1 Drug abuse is becoming an increasing problem for college students in general.					
2.2 The abuse of drugs on the college campus is a passing fad.					

	SA	A	NO	D	SD
2.3 Marijuana is becoming a "crutch" for an increasing number of students.					
2.4 Most students who abuse drugs are unhappy with their home life.					
2.5 University students should be made aware of the dangers of drug abuse.					
2.6 Conferences, workshops, or retreats on drug education will not effectively slow down the abuse of drugs.					
2.7 The University should establish a drug information service to provide students, faculty, and administration with current information concerning drugs.					
2.8 I feel that I am personally well informed concerning the effects of drug use.					

2.9-

3.8 Determine which of the following sources for drug information have been significant in your personal gaining of knowledge. Break down the sources into percentages, showing the per cent of your knowledge gained from each source. Use the following code and place the appropriate number in the blank at the left of each source. Each number may be used more than once.

- 2.9 _____ friends
- 3.0 _____ parents
- 3.1 _____ brothers and/or sisters
- 3.2 _____ teachers
- 3.3 _____ radio
- 3.4 _____ television
- 3.5 _____ newspapers
- 3.6 _____ magazines
- 3.7 _____ books
- 3.8 _____ other (please specify): _____

1 = 0%
 2 = 1% to 24%
 3 = 25% to 49%
 4 = 50% to 74%
 5 = 75% to 100%

3.9 How many persons have you known who have smoked marijuana more than once?

- | | |
|---------------|-------------------------|
| 1) _____ none | 3) _____ two to five |
| 2) _____ one | 4) _____ more than five |

4.0 How many persons have you known who have ever used LSD?

- | | |
|---------------|-------------------------|
| 1) _____ none | 3) _____ two to five |
| 2) _____ one | 4) _____ more than five |

4.1 How many persons have you known who have ever used speed?

- | | |
|---------------|-------------------------|
| 1) _____ none | 3) _____ two to five |
| 2) _____ one | 4) _____ more than five |

4.2 How many persons have you known who have ever used heroin?

- | | |
|---------------|-------------------------|
| 1) _____ none | 3) _____ two to five |
| 2) _____ one | 4) _____ more than five |

4.3 Have you ever used marijuana?

- | | |
|----------------|-------------------------------|
| 1) _____ never | 3) _____ two to five times |
| 2) _____ once | 4) _____ more than five times |

4.4 Have you ever used LSD?

- | | |
|----------------|-------------------------------|
| 1) _____ never | 3) _____ two to five times |
| 2) _____ once | 4) _____ more than five times |

4.5 Have you ever used speed?

- | | |
|----------------|-------------------------------|
| 1) _____ never | 3) _____ two to five times |
| 2) _____ once | 4) _____ more than five times |

4.6 Have you ever used heroin?

- | | |
|----------------|-------------------------------|
| 1) _____ never | 3) _____ two to five times |
| 2) _____ once | 4) _____ more than five times |

CHAPTER III

P R E S E N T A T I O N A N D A N A L Y S I S O F D A T A

During the winter of 1970-1971, 218 questionnaires were administered to students enrolled in required Physical Education classes at Texas Woman's University. Two hundred of the questionnaires were usable for determining student knowledge, attitudes, and use of drugs. A computer was used to analyze the data.

Almost half the participants were 17 to 18 years of age. The 19-year-olds comprised 33.5 per cent of the sample, and the 20-year-olds, 10 per cent. Only 9 per cent of the respondents were over 20 years of age. Two students failed to indicate their ages. The mean for the group was 18.7 years of age.

<u>Age of Respondents</u>	<u>Number</u>	<u>Per cent</u>
17-18 years	93	46.5
19 years	67	33.5
20 years	20	10.0
Above 20 years	18	9.0
No response	2	1.0

When considering the classification of these students,

over half were freshmen. There were 55 sophomores, 15 juniors, 7 seniors, and 2 graduate students in the group.

<u>Classification in College</u>	<u>Number</u>	<u>Per cent</u>
Freshman	121	60.5
Sophomore	55	27.5
Junior	15	7.5
Senior	7	3.5
Graduate	2	1.0

Participants were asked to identify the population of their hometowns. Five per cent of the sample indicated that their hometowns were very small rural communities. Over half the students came from communities with less than 100,000 people. Large metropolitan areas, namely, Dallas and Houston, accounted for the residence of 27 per cent of the sample.

<u>Population of Hometown</u>	<u>Number</u>	<u>Per cent</u>
Below 500	10	5.0
500-9,999	41	20.5
10,000-49,999	42	21.0
50,000-99,999	32	16.0
100,000-499,999	19	9.5
500,000 or above	54	27.0
No response	2	1.0

The occupation of the chief income earner of the family was established to be in one of five groups arbitrarily devised by the researcher with the aid of Hopke's Encyclopedia of Careers and Vocational Guidance (11). Group I represented semiskilled, unskilled, and service occupations. The areas of

sales, clerical, skilled, semiprofessional, and technical occupations composed Group II. Farming, managerial, and official occupations were organized under Group III. Group IV consisted only of professional fields. In order to identify those students whose father was deceased and whose mother was not employed, Group V was created. A large representation was shown in each of the four major groups. Group II comprised the largest percentage of students, and Group I was the smallest. The mean for the sample fell half way between Group II and Group III.

<u>Occupation of Chief Income Earner</u>	<u>Number</u>	<u>Per cent</u>
Group I	29	14.5
Group II	77	38.5
Group III	47	23.5
Group IV	45	22.5
Group V	2	1.0

Another variable in the study was church participation. Students rated themselves according to how active they felt they were. Over half the sample, 57.5 per cent, considered themselves to be moderately active. The very active group comprised 15.5 per cent of the group. Those who said they were inactive totaled 21.5 per cent of the students questioned, while 5.5 per cent reported that they never attend church.

<u>Church Participation</u>	<u>Number</u>	<u>Per cent</u>
Very active	31	15.5
Moderately active	115	57.5
Inactive	43	21.5
Never attend	11	5.5

Students participating in the study were asked to judge the happiness of their own families. Unlike what might be expected, an overwhelming majority considered their families to be happy. Thirty-seven per cent of the group rated their families as very happy, while 59 per cent considered their families to be generally happy. A very small percentage of 3.5 reported their families to be unhappy. One student out of the 200 interpreted her family as being very unhappy.

<u>Happiness of Family</u>	<u>Number</u>	<u>Per cent</u>
Very happy	74	37.0
Generally happy	118	59.0
Unhappy	7	3.5
Very unhappy	1	0.5

The published instrument, "A Drug Knowledge Inventory," was used to ascertain the extent of general knowledge students had concerning various drugs of abuse. Out of a possible 44 points, the mean for the sample was 22.39 correct answers. McHugh's (18) established norms for this test report a mean of 22.55 for college females. Texas Woman's University students fell slightly below this norm. However, the mean age for the norm was 20.76 years, as compared to 18.71 years at Texas Woman's University. Tomlinson's (27) use of this instrument among students at a nearby university resulted in a mean score of 25.75. Males as well as females were included in this study, and the majority of the students were seniors.

Sources of drug information was also an area of investigation. Table 1 shows the distribution of knowledge gained from various sources. Friends were the most frequently reported means of acquiring drug information. The mass media, particularly magazines, books, and television, ranked high, while parents and siblings ranked lowest on the list of possible sources. Although teachers were not ranked as high as friends and the mass media, they did outrank family members. It seems the schools are contributing more than the family in the drug education of these young people. Parents' lack of knowledge in the area perhaps contributed to the poor communication of drug education.

Student use of marijuana, LSD, Methedrine, and heroin was reported showing the extent of use of each drug. Data showing drug use were compiled in Table 2. Marijuana was reportedly used by 19 per cent of the students. However, 24 of the 38 students reporting marijuana use said they had used it more than five times, indicating a habit more extensive than simple curiosity of the effects. In 1968, Berg (1) reported a somewhat lower percentage of 17.5 for female use of marijuana at Ithaca College. Perhaps the increased percentage two years later at Texas Woman's University follows a trend of increased use of marijuana on college campuses. Of the 200 students questioned at Texas Woman's University, 5 girls had used LSD; all more than once. This 2.5 per cent of LSD use falls within

TABLE 1
SOURCES OF DRUG INFORMATION OF 200 UNIVERSITY STUDENTS

Source	Degree of Significance *									
	1		2		3		4		5	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Friends	25	12.5	65	32.5	30	15.0	40	20.0	40	20.0
Parents	89	44.5	64	32.0	22	11.0	14	7.0	11	5.5
Siblings	119	59.5	47	23.5	19	9.5	11	5.5	4	2.0
Teachers	35	17.5	79	39.5	40	20.0	26	13.0	20	10.0
Radio	66	33.0	79	39.5	25	12.5	13	6.5	17	8.5
Television	18	9.0	71	35.5	44	22.0	38	19.0	29	14.5
Newspapers	27	13.5	63	31.5	55	27.5	34	17.0	21	10.5
Magazines	10	5.0	54	27.0	53	26.5	52	26.0	31	15.5
Books	50	25.0	57	28.5	24	12.0	32	16.0	37	18.5
Other	149	74.5	12	6.0	11	5.5	16	8.0	12	6.0

* The numbers correspond with a coded percentage of information gained from each source: 1 = 0%; 2 = 1% to 24%; 3 = 25% to 49%; 4 = 50% to 74%; and 5 = 75% to 100%.

the range of 2 per cent to 9 per cent established by Blum (3). The use of Methedrine among students was more extensive than the use of LSD. Seven students, 3.5 per cent, reported use of Methedrine. The majority of these students had used Methedrine more than five times. These results are considerably lower than the results at Ithaca College. Berg (1) reported that 7 per cent of the females there had used Methedrine. Only 0.5 per cent of the students tested at Texas Woman's University reported having used heroin. However, this one student had used the narcotic more than once. Drug use of study participants is shown in Table 2.

Students were requested to identify how many persons they had ever known who had used marijuana, LSD, Methedrine, and heroin. Summary results are grouped in Table 3. Although the personal use of drugs was somewhat limited, students definitely knew other drug users. Nineteen per cent of the students did not know any marijuana users, while 51.5 per cent knew more than five. The number of LSD and Methedrine users known to the students was considerably less than the number of marijuana users: almost half the students knew no one who used LSD or Methedrine. Seventy-three per cent knew no heroin users. Horman's (12) study reported that 75 per cent of the sample knew one or more persons using drugs. Among the students at Texas Woman's University, at least 81 per cent of the students knew one or more drug users. Perhaps this increase is an indication that drug users are becoming more open in the use of drugs.

TABLE 2
STUDENT DRUG USE

Drug	Student Use							
	never		once		2-5 times		over 5 times	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Marijuana	162	81.0	6	3.0	8	4.0	24	12.0
LSD	195	97.5	0	0.0	3	1.5	2	1.0
Methedrine	193	96.5	2	1.0	1	0.5	4	2.0
Heroin	199	99.5	0	0.0	1	0.5	0	0.0

TABLE 3

NUMBER OF PERSONS STUDENTS KNOW WHO HAVE USED DRUGS

Drug	Number of Persons Known							
	0		1		2-5		over 5	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Marijuana	38	19.0	12	6.0	47	23.5	103	51.5
LSD	97	48.5	26	13.0	45	22.5	32	16.0
Methedrine	93	46.5	23	11.5	55	27.5	29	14.5
Heroin	146	73.0	29	14.5	18	9.0	7	3.5

The Pearson product-moment correlation procedure was used to determine the relationship between various pairs of variables. The drug knowledge score was correlated with age, occupation of the chief income earner, population of the hometown, happiness of the family, and participation in church functions. None of these correlations was significant at the .05 level of significance. However, all the correlations were positive, and two of them approached significance. The relationship between drug knowledge and occupation of the chief income earner produced a correlation coefficient very close to the significance level. As the occupation of the parent became more professional, the knowledge level of the student increased. The relationship between the drug knowledge score and participation in church functions also produced a correlation coefficient approaching the significance level. As the participation in church functions declined, the drug knowledge increased.

The use of marijuana was correlated with age, occupation of the chief income earner, population of the hometown, happiness of the family, participation in church functions, and the drug knowledge score. None of these correlations showed a significant relationship. However, two correlations produced a negative coefficient: as age increased, the use of marijuana declined; as the occupation of the chief income earner approached professionalism, the use of marijuana declined. The remaining correlations were positive, although none were significant.

Table 4 summarizes the findings of an investigation into student drug attitudes. Participants were asked to state their attitudes toward various drug-related statements by checking the column entitled Strongly Agree, Agree, No Opinion, Disagree, or Strongly Disagree. A few statements were not reacted to by a few of the participants. Perhaps these statements were simply overlooked.

Over half the students, 59.5 per cent, felt that marijuana should not be legalized, while 15.5 per cent checked No Opinion. The remaining 25 per cent agree with the statement that marijuana should be legalized. A higher percentage of 48.5 felt that the penalty for marijuana possession should be lowered. However, only 16 per cent of the students agreed that the penalty for selling marijuana should be lowered. A large majority of 81.5 per cent felt that more research should be completed before a decision is made about legalizing marijuana.

The reaction to LSD was much more negative than the reaction to marijuana. Only 1 person out of the 200 felt that LSD should be legalized. Hallucinogens are sometimes claimed to be enhancers of creativity. Although a majority of the students felt this was not true, there was an indication of indecision by the 25.5 per cent who checked No Opinion.

Drug abuse is generally defined as illegal use of drugs; a majority of these students felt that there is a difference

between drug abuse and illegal drug use. They apparently do not consider drug experimenters to be drug abusers. But the data show that 75 per cent of these students felt that drug abuse is becoming an increasing problem for college students in general. Only 14 per cent felt that drug abuse on the college campus is a passing fad. When asked to react to the statement "Marijuana is becoming a 'crutch' for an increasing number of students," 61.5 per cent agreed and 20 per cent stated no opinion. There was a wide difference of opinion on the idea that students who abuse drugs are unhappy at home. No opinion was stated by 23.5 per cent, while the remainder of the students were divided between agreement and disagreement.

When given statements concerning drug education by the University, the response was very positive. Ninety-four per cent of the participants agreed that university students should be made aware of the dangers of drug abuse. However, 30 per cent of the students agreed with the statement that conferences, workshops, or retreats on drug education would not effectively slow down the abuse of drugs. The reaction to the proposal that the University establish a drug information service to provide students, faculty, and administration with current information was overwhelmingly positive. Ninety-three per cent agreed with this proposal. The last statement concerned the student's evaluation of her personal knowledge of drugs. Sixty per cent of the students felt they were not well informed about

TABLE 4

STUDENT REACTIONS TO DRUG-RELATED STATEMENTS

Statement	No Answer	
	No.	Per cent.
The use of marijuana should be legalized.	0	0.0
The penalty for marijuana possession should be lessened.	0	0.0
The penalty for selling marijuana should be lessened.	0	0.0
More research should be completed before a decision is made about legalizing marijuana.	1	0.5
The use of LSD should be legalized.	3	1.5
There is a difference between illegal use of drugs and abuse of drugs.	1	0.5
Drugs can be used to increase creativity.	0	0.0
Drug abuse is becoming an increasing problem for college students in general.	1	0.5
The abuse of drugs on the college campus is a passing fad.	2	1.0
Marijuana is becoming a "crutch" for an increasing number of students.	0	0.0
Most students who abuse drugs are unhappy with their home life.	0	0.0
University students should be made aware of the dangers of drug abuse.	1	0.5
Conferences, workshops, or retreats on drug education will not effectively slow down the abuse of drugs.	0	0.0
The University should establish a drug information service to provide students, faculty, and administration with current information.	0	0.0
I feel that I am personally well informed concerning the effects of drug use.	0	0.0

TABLE 4--Continued

Student Responses									
Strongly Agree		Agree		No Opinion		Disagree		Strongly Disagree	
No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
14	7.0	36	18.0	31	15.5	52	26.0	67	33.5
45	22.5	52	26.0	13	6.5	38	19.0	52	26.0
8	4.0	24	12.0	16	8.0	54	27.0	98	49.0
89	44.5	74	37.0	17	8.5	11	5.5	8	4.0
1	0.5	0	0.0	5	2.5	27	13.5	164	82.0
35	17.5	80	40.0	31	15.5	38	19.0	15	7.5
4	2.0	32	16.0	51	25.5	54	27.0	59	29.5
44	22.0	106	53.0	19	9.5	19	9.5	11	5.5
4	2.0	24	12.0	35	17.5	98	49.0	37	18.5
22	11.0	101	50.5	40	20.0	30	15.0	7	3.5
20	10.0	63	31.5	47	23.5	53	26.5	17	8.5
103	51.5	85	42.5	7	3.5	3	1.5	1	0.5
8	4.0	52	26.0	30	15.0	93	46.5	17	8.5
75	37.5	111	55.5	11	5.5	3	1.5	0	0.0
7	3.5	46	23.0	27	13.5	88	44.0	32	16.0

the effects of drug use. Perhaps these attitudes reflect a need for increased drug education at Texas Woman's University.

This study showed no single factor affecting drug knowledge or drug use. However, the data revealed that illegal drugs, especially marijuana, were being used on the campus of Texas Woman's University. Students were not generally well informed about the effects of drugs, but they were interested in learning factual information. The students felt that the university could possibly be a great help in their search for drug knowledge.

CHAPTER IV

S U M M A R Y , C O N C L U S I O N S , A N D R E C O M M E N D A T I O N S

The purposes of the study were to 1) explore the knowledge that Texas Woman's University students have concerning drugs and drug abuse; 2) compare the extent of drug knowledge with age, socio-economic background, population of hometown, and nation-wide norms; 3) investigate the kind and frequency of drug use on the campus of Texas Woman's University; 4) compare drug use with drug knowledge, age, socio-economic background, religious activity, and happiness of family life; and 5) determine student attitudes toward drug use. During the winter of 1970-1971, 200 Texas Woman's University students enrolled in Physical Education classes completed questionnaires. A published instrument, "A Drug Knowledge Inventory," measured drug knowledge. The investigator developed a "General Information Sheet" which reported biographical information, sources of drug knowledge, attitudes toward drug-related statements, and use of drugs among the participants and among persons they knew. The questionnaires were analyzed with the aid of a computer.

The mean age for the group was 18.7 years; over half the sample were freshmen. Residences of the participants varied

evenly among various sizes of communities. There was also a wide variety of occupations of parents represented in the group. Seventy-three per cent of the students reported that they were moderately active or very active in church functions. When requested to rate the happiness of their families, 96 per cent of the group rated their families as generally happy or very happy. Friends and the mass media were reported as being the most significant sources of drug information for the students in the study.

Out of a possible 44 points on "A Drug Knowledge Inventory," the mean for the sample was 22.37 correct answers. This score was slightly below the norm of 22.55 established for this instrument by McHugh and Williams using a sample of 588 female college students with a mean education of 14.41 years.

When questioned about drug users known by the students, 81 per cent of the participants knew one or more drug users. In revealing the participants' personal use of drugs, 19 per cent of the students stated they had used marijuana at least once. Use of other drugs was very limited.

The Pearson product-moment correlation procedure was used to determine the relationship between pairs of variables. The drug knowledge score was correlated with age, occupation of the chief income earner, population of the hometown,

happiness of the family, and participation in church functions. None of these correlations was significant at the .05 level of significance. The use of marijuana was correlated with age, occupation of the chief income earner, population of the hometown, happiness of the family, participation in church functions, and the drug knowledge score. None of these correlations revealed a significant relationship.

In expressing attitudes toward various drug-related statements, 59.5 per cent of the students felt that marijuana should not be legalized. Only 1 person out of the 200 felt that LSD should be legalized. The data revealed that 75 per cent of these students felt that drug abuse is becoming an increasing problem for college students in general. There was a wide difference of opinion on the idea that students who abuse drugs are unhappy at home. Student responses were very positive to the proposal for drug education on the college level. Ninety-four per cent of the participants agreed that university students should be made aware of the dangers of drug abuse, while 60 per cent of the students felt they were not well informed about the effects of drug use.

As a result of this study, the investigator has reached the conclusion that the literature is inconclusive and much more research needs to be completed, particularly with the hallucinogens. Students were indecisive about the legalization

of marijuana because of the lack of conclusive scientific information available. Students expressed a lack of knowledge and/or confusion about the effects of various drugs; however, they were seeking scientific information upon which to base their decisions about drug use. Friends and mass media provided the most significant sources of drug information. Students were indecisive about the relationship of drug abuse to the condition of the family life. Use of marijuana in this study, 19 per cent, was comparable to the results of many other studies. Students were concerned about the use of drugs on the college campus; 75 per cent of the students felt that drug abuse is becoming an increasing problem for college students in general.

For further studies done in this area, a larger sample with a wider age range is recommended by the researcher. Since reported studies indicate a difference between male and female drug usage, a population including males as well as females should be selected. A recommended expansion of the correlations made in this study is the correlation between academic achievement and the use of drugs. A more simplified method for reporting sources of drug information is also recommended: a simple ranking system could produce more reliable and usable results. The final recommendation for future research is to analyze individual questions of the "Drug Knowledge Inventory," possibly for the purpose of establishing

a specific drug education program.

As a result of this study, the researcher has gained a clearer understanding of what factual information students at Texas Woman's University possess. Findings indicate that a more intensive drug education program is needed and desired by students at this university. Perhaps an interdisciplinary center for drug education and counseling for drug abusers could be established on campus. Results of the study reveal that illegal use of drugs does exist on the campus of Texas Woman's University. Attitudes reported by the students in the study indicate confusion and a need for guidance by a large number of students. Hopefully, the results of this study will aid educators on this campus in their understanding of the problems of drug abuse confronting the students.

S E L E C T E D B I B L I O G R A P H Y

1. Berg, Dorothy F. Extent of Illicit Drug Use in the United States. Washington, D.C.: U.S. Government Printing Office, 1969.
2. Blum, Richard H. and Associates. Drugs I: Society and Drugs: Social and Cultural Observations. San Francisco: Jossey-Bass Incorporated, 1969.
3. Blum, Richard H. and Associates. Drugs II: Students and Drugs: College and High School Observations. San Francisco: Jossey-Bass Incorporated, 1970.
4. Boeth, Richard. "The Heroin Plague: What Can Be Done?" Newsweek, Vol. 78, No. 1 (July 5, 1971).
5. Brenner, Joseph H., Robert Coles, and Dermot Meagher. Drugs and Youth: Medical, Psychiatric, and Legal Facts. New York: Liveright Publishing Corporation, 1970.
6. Brown, Jim M. "Differences in Attitudes of Public School Students Toward Selected Drugs and the Relationship Between These Attitudes and Drug Knowledge." Unpublished Ph.D. dissertation, North Texas State University, Denton, Texas, 1971.
7. Chein, Isidor and others. The Road to H. New York: Basic Books, Inc., 1964.
8. Cory, Christopher and Raymond Geoffrey. A Time Guide to Drugs and the Young. New York: The Time Education Program, 1970.
9. Fact Sheets: Bureau of Narcotics and Dangerous Drugs. Washington, D.C.: U.S. Government Printing Office, 1969.
10. A Federal Source Book: Answers to the Most Frequently Asked Questions about Drug Abuse. Chevy Chase, Maryland: The National Clearinghouse for Drug Abuse Information, 1970.

11. Hopke, William E., ed. Encyclopedia of Careers and Vocational Guidance. Vol. II: Careers and Occupations. Chicago: J.G. Ferguson Publishing Company, 1967.
12. Horman, Richard E. "Attitudes About Drugs and Drug Abuse of Members of a Large Urban University." Unpublished master's thesis, Temple University, Philadelphia, Pennsylvania, 1968.
13. Horman, Richard E. and Allan M. Fox, ed. Drug Awareness. New York: Avon Books, 1970.
14. Jones, Marian Smith. "A Comparative Study of Drug Knowledge in an Urban School and Implications for Drug Education." Unpublished Ph.D. dissertation, Texas Woman's University, Denton, Texas, 1971.
15. Kitzinger, Angela and Patricia J. Hill. Drug Abuse: A Source Book and Guide for Teachers. Sacramento: California State Department of Education, 1967.
16. Leonard, Harriet. "A Study of Adolescents' Knowledge Concerning the Effects of LSD Among a Selected Sample of Roman Catholic Girls." Unpublished master's thesis, Syracuse University, Syracuse, New York, 1968.
17. Louria, Donald B. The Drug Scene. New York: McGraw-Hill Book Company, 1968.
18. McHugh, Gelolo and Jay C. Williams. A Drug Knowledge Inventory: Discussion Guide. Durham, North Carolina: Family Life Publications, Inc., 1969.
19. Merki, Donald J. Drug Abuse: Teenage Hangup. Dallas: Texas Alcohol Narcotics Education, Inc., 1970.
20. Moskin, J. Robert. "Drugs: We Are Just Plain Ignorant." Look, Vol. 34, No. 20 (October 6, 1970).
21. North Texas Daily (Denton, Texas), September 3, 1971.
22. North Texas Daily (Denton, Texas), September 10, 1971.
23. Recent Research on Narcotics, LSD, Marijuana and Other Dangerous Drugs. Washington, D.C.: U.S. Government Printing Office, 1970.
24. Resource Book for Drug Abuse Education. Chevy Chase, Maryland: The National Clearinghouse for Drug Abuse Information, 1969.

25. Robinson, Lisa. "Marijuana Use in High School Girls: A Psycho-Social Case Study." Dissertation Abstracts, Vol. 31 (November, 1970), 2196-A.
26. Suchman, Edward A. "The 'Hang-Loose' Ethic and the Spirit of Drug Use." Journal of Health and Social Behavior, Vol. 9, No. 2 (June, 1968).
27. Tomlinson, Lillie B. "Knowledge Relative to Drugs and Drug Usage of a Group of Student Teachers, Teachers, and Public School Students." Unpublished Ph.D. dissertation, Texas Woman's University, Denton, Texas, 1971.
28. Wittenborn, J. R., Henry Brill, Jean Paul Smith, and Sarah H. Wittenborn, ed. Drugs and Youth: Proceedings of the Rutgers Symposium on Drug Abuse. Springfield, Illinois: Charles C. Thomas, Publisher, 1969.

A P P E N D I X

A DRUG KNOWLEDGE INVENTORY

Developed by

Gelolo McHugh and Jay C. Williams

This is a teaching test to help you learn facts about drugs and discover your drug education needs.

Your teacher or discussion leader will not be concerned with your score on this test for the purpose of giving you a grade. His or her interest will be in helping you learn important facts about drugs so you will be able to make constructive behavior choices about their use.

Please supply the following: Your age _____ years; Sex--male _____ or _____ female; Your education _____ year or grade in school.

Directions: This is a multiple choice test. Draw a circle around the number printed to the left of the answer you consider to be the best answer to each question. Choose a best answer to each question. If you do not know, guess. Be sure to answer every question.

I. Do you know the difference between addictive and habit-forming drugs?

1. An addictive drug is one which causes:

- * 1. emotional and physical craving and a need to increase dosage.
- 2. emotional and physical craving, but no need to increase dosage.
- 3. emotional craving, but no physical craving or need to increase dosage.
- 4. regular use, but no craving or need to increase dosage.

* Correct answer

Published by FAMILY LIFE PUBLICATIONS, INC., Box 6725, Durham, North Carolina 27708. Copyright 1969 by Family Life Publications, Inc. All rights reserved. Printed in the United States.

2. A habit-forming drug is one which causes:
 1. emotional and physical craving and a need to increase dosage.
 2. emotional and physical craving, but no need to increase dosage.
 - * 3. emotional craving, but no physical craving or need to increase dosage.
 4. regular use, but no craving or need to increase dosage.

II. What do you know about drug addiction in the United States today?

3. Where in the United States is drug addiction most often found?
 1. College campus
 2. Middle-class suburb
 3. Rural area
 - * 4. City slum area
4. In the United States today, the most common drug addiction is to:
 1. cocaine
 - * 2. heroin
 3. morphine
 4. phenobarbital
5. Of those listed below which is the least frequent cause of drug addiction among teenagers?
 1. Curiosity
 - * 2. Peddlers or "pushers"
 3. Pressure from peers
 4. Thrill-seeking

III. What do you know about addictive drugs?

A. What do you know about barbiturates?

6. Which terms refer to barbiturates?
 - * 1. Amytal, Nembutal, Seconal
 2. Benzedrine, Dexedrine, Methedrine
 3. Librium, Miltown, Thorazine
 4. Codeine, Heroin, Morphine

7. The most important medical use of barbiturates is:
- * 1. to bring about sleep.
 - 2. to reduce tension.
 - 3. to relieve pain.
 - 4. in research.
8. Which one is the most likely description of a person who has taken more than a prescribed amount of a barbiturate?
- 1. Giggling, daydreaming
 - 2. Even-tempered, withdrawn
 - * 3. Drowsy, slurred speech
 - 4. Restless, perspiring
- B. What do you know about opiates?
9. Opium is derived from:
- 1. a cactus.
 - 2. a hemp plant.
 - 3. a mushroom.
 - * 4. a flower.
10. Which of the following terms refers to a drug made from opium?
- 1. Cocaine
 - 2. Methedrine
 - * 3. Morphine
 - 4. Hashish
11. The most important medical use of opiates is:
- 1. as an anaesthetic.
 - * 2. to relieve pain.
 - 3. to reduce tension.
 - 4. in research.
12. Which one is the most likely description of a person who has taken more than a prescribed amount of an opiate?
- 1. Excited and hyperactive
 - 2. Hostile and aggressive
 - 3. Nervous and fearful
 - * 4. Quiet and inactive

13. What happens when an opiate addict discontinues the use of opiates?
1. Withdrawal causes no more physical distress than discontinuing use of tobacco.
 - * 2. Withdrawal causes much physical distress but little danger of death.
 3. Withdrawal causes much physical distress and considerable danger of death.
 4. Withdrawal causes much emotional distress but little physical distress.
14. What happens when an unborn baby's mother is an opiate addict?
- * 1. The baby is an opiate addict at birth.
 2. The baby is likely to be physically deformed.
 3. The baby is likely to be mentally retarded.
 4. The baby will be unaffected.
15. Which is the best explanation for the close relationship between opiate use and crime?
- * 1. An addiction to opiates is very expensive.
 2. Opiates inspire criminal acts.
 3. An opiate user is not fully aware of what he is doing.
 4. Opiates decrease fears and inhibitions.
- C. What do you know about tranquilizers?
16. Which terms refer to tranquilizers?
1. Amytal, Nembutal, Seconal
 2. Benzedrine, Dexedrine, Methedrine
 3. Codeine, Heroin, Morphine
 - * 4. Librium, Miltown, Thorazine
17. The most important medical use of tranquilizers is:
1. to bring about sleep.
 - * 2. to reduce tension.
 3. to relieve pain.
 4. to increase alertness.
18. Which are the physically harmful effects most likely to result from misuse of tranquilizers?
1. Damage to brain, kidneys, and liver
 2. Reduced sex drive and damage to reproductive capacity
 3. Irregular heartbeat and high blood pressure
 - * 4. Weight gain and blood cell damage

IV. What do you know about habit-forming drugs?

A. What do you know about amphetamines?

19. Which of the following terms refer to amphetamines?

1. Amytal, Nembutal, Seconal
- * 2. Benzedrine, Dexedrine, Methedrine
3. Librium, Miltown, Thorazine
4. Codeine, Heroin, Morphine

20. The normal medical use of amphetamines is in:

- * 1. relief from drowsiness and depression.
2. relief from fear and anxiety.
3. relief from restlessness and excitability.
4. research on human behavior.

21. By taking an amphetamine one may be able to:

1. think more clearly.
2. do better on tests.
- * 3. stay awake.
4. remain calm under pressure.

22. Which is the most likely description of a person who has taken more than a prescribed dose of an amphetamine?

1. Giggling, daydreaming, enlarged pupils
2. Inactive, quiet, small pupils
3. Poor balance, slurred speech, short temper
- * 4. Restless, perspiring, enlarged pupils

23. The greatest danger from over use of an amphetamine is in its effect on:

1. body temperature.
2. breathing rate.
- * 3. heartbeat.
4. oxygen in the blood.

B. What do you know about hallucinogens?

(Hallucinogens also are known as psychedelic, mind-expanding or mind-altering drugs)

24. Which terms refer to hallucinogens?

1. Cocaine, novocaine
2. Dilaudid, paregoric
3. Luminal, Tuinal
- * 4. Mescaline, psilocybin

25. The most important medical use of hallucinogens is in:

1. overcoming depression.
2. treatment of mental and emotional problems.
3. controlling fear and anxiety.
- * 4. research on human behavior.

26. Which of the following is intensified by taking hallucinogens?

1. Concentration
- * 2. Imagination
3. Judgment
4. Motivation

27. How does LSD affect vision and hearing?

1. It has no effect on vision or on hearing.
- * 2. It affects the ways sights and sounds are experienced.
3. It makes vision and hearing less sensitive.
4. It makes ears and eyes hear and see better.

28. Which are the physical side effects most likely to accompany LSD use?

1. Vomiting, stomach cramps
2. Headache, fever, sweating
3. Increased blood pressure and pulse rate
- * 4. Nausea, chills, enlarged pupils

C. What do you know about marihuana?

29. Authoritative literature about the possibility of physical damage from marihuana indicates that:

1. its use does damage to nerves and lungs.
2. its use does no physical damage.
- * 3. it has not been proved to be physically harmful.
4. it is physically harmful only if often used.

30. What kind of person is likely to become an habitual user of marihuana?

1. One who has little self-control
2. Those who are easily influenced by others
3. People who are unhappy because of conditions in their lives
- * 4. No one kind of person

31. Which are the most probable immediate effects of marihuana use?
- * 1. Daydreaming, altered sense of time
 - 2. Restlessness, quick temper
 - 3. Inactivity, small pupils
 - 4. Slurred speech, poor balance
32. The frequent user of marihuana is likely to be:
- 1. calm and alert.
 - 2. depressed and fearful.
 - 3. excitable and irritable.
 - * 4. tired and indifferent.
33. Which statement best describes the relationship of marihuana use to mental illness?
- 1. Its use can cause mental illness.
 - 2. Its use is not related to mental illness.
 - 3. Its use may increase one's chances of becoming mentally ill.
 - * 4. Its use may disclose or aggravate mental illness.
34. Which of the following best accounts for the belief that use of marihuana causes use of more dangerous drugs?
- 1. Frequent use of marihuana causes a need for addictive drugs.
 - * 2. A marihuana user is likely to contact and be influenced by users of other drugs.
 - 3. Frequent use of marihuana causes a craving for other "mind-altering" drugs.
 - 4. Marihuana use weakens personality and causes willingness to use stronger drugs.
35. How can one know that a person has been smoking marihuana?
- 1. Blood test
 - 2. Dilated pupils
 - * 3. Odor on breath
 - 4. Urinalysis

V. Do you know the best answer to each of the following questions?

36. The person who occasionally uses more than the prescribed amount of addictive drugs:
- 1. will not become addicted.
 - * 2. may become addicted.
 - 3. will become addicted in time.
 - 4. may already be moderately addicted.

37. Which one of the following is the best description of the kind of person who is likely to become a drug addict?
- * 1. No one kind of person
 - 2. A person who is unable to achieve a satisfactory social adjustment
 - 3. A person who is unable to foresee the end results of his behavior
 - 4. A person of weak character and of little self-control
38. Black market drugs are unsafe because:
- * 1. they often are of unknown strength and of questionable purity.
 - 2. they usually are stronger than prescribed drugs.
 - 3. they are more likely to cause addiction than prescribed drugs.
 - 4. they often are spoiled drugs that have been discarded.
39. Misuse of which one of the following kinds of drugs most often causes death?
- 1. Amphetamines
 - * 2. Barbiturates
 - 3. Hallucinogens
 - 4. Opiates
40. An addicted person is in the greatest danger of dying when he discontinues use of which one of the following:
- 1. Alcohol
 - 2. Heroin
 - * 3. Phenobarbital
 - 4. Morphine
41. When taken more often than prescribed or in larger doses than directed, some cough medicines may cause addiction because they contain:
- 1. heroin.
 - * 2. codeine.
 - 3. morphine.
 - 4. phenobarbital.

42. Which of the following are the most probable effects of cocaine?
1. Daydreaming, enlarged pupils, habit-formation
 2. Inactivity, small pupils, addiction
 3. Slurred speech, poor balance, addiction
 - * 4. Excessive talking, excitement, habit-formation
43. Which of the following are probable harmful effects of sniffing substances such as glue, cleaning fluids, gasoline, etc.?
- * 1. Damage to brain, kidneys, and liver
 2. Damage to chromosomes and nervous system
 3. Irregular heartbeat and high blood pressure
 4. Weight gain and blood cell damage
44. Which is likely to be the most productive first step in overcoming a drug addiction or a drug habit?
1. Stop all use at once
 2. Begin gradual withdrawal
 - * 3. Seek professional help
 4. Ask friends and family to help