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THE EPIDEMIOLOGY OF DANGEROUS DRUGS AND OTHER
SUBSTANCES AMONG THE EDUCABLE
MENTALLY RETARDED

By

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A DISSERTATION

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CHAPTER I

Introduction

The titles of popular and scientific books and articles, the headlines and stories in our daily newspapers and the numerous radio and television programs have continually and consistently reported that the non-medical use of dangerous drugs is escalating rapidly. According to these reports, this fact is particularly true for adolescents and young adults. Reports regarding the use of marihuana, LSD and other hallucinogens, the abusive misutilization of amphetamines and barbiturates, the continuing narcotics pattern and the perverted use of common substances such as glue and gasoline, have received wide coverage both in the mass news media and in educational literature (National Clearinghouse for Drug Abuse Information, 1971a). Concerned individuals, the mass media, the police and other governmental agencies, social scientists and educators have all been involved in this flow of information (Blum, 1969b).

The entire country appears startled and stimulated toward action as information concerning the growing juvenile abuse of drugs becomes available. Concerning this critical situation President Nixon, in a special fund-requesting

message to Congress, stated that "Within the last decade, the abuse of drugs has grown into a serious national threat to the personal health and safety of millions of Americans (Barrins, 1969, p. 17)." The President presented facts verifying that juvenile arrests involving the use of drugs rose nearly 800 percent between 1960 and 1967. During this message he also stated:

It is doubtful that an American parent can send a son or daughter to college today without exposing the young man or woman to drug abuse. Parents must also be concerned about the availability and the use of such drugs in our high schools and junior high schools (Barrins, 1969, p. 17).

President Nixon again highlighted the contemporary drug abuse situation in introducing the revised Answers to the Most Frequently Asked Questions About Drug Abuse (National Clearinghouse for Drug Abuse Information, 1971b), he stated:

Drug misuse is a growing national problem. Hundreds of thousands of Americans--young and old alike--endanger their health through the inappropriate use of drugs of all kinds. More than 100,000 of these Americans lead totally unproductive lives because of their addiction to narcotics.

The blight of illegal drug traffic--the lives it ruins and the lives it takes--is a serious concern for every American. It especially concerns American parents (Introductory page).

Drugs, particularly the narcotics, have been known and misused throughout the world since the beginning of recorded time (Griffenhagen, 1969). Blum (1969a) has presented evidence showing that several types of drugs

were regularly used by many ancient civilizations. Up to the eighteenth and nineteenth centuries their usage and subsequent abuse were concentrated in the Middle and Far East (Griffenhagen, 1969). However, since that time drug usage has become completely universal, especially becoming a problem in the United States (Blum, 1969a).

There were several general comments about the extent of the drug abuse problem in this country that appeared appropriate. The first came from Stanley F. Yolles, Director of the National Clearinghouse on Drug Abuse Information. He reported to the Senate Subcommittee on Juvenile Delinquency that an estimated two million youths have had some experience with marihuana and that evidence points out that this use is increasing (National Institute of Mental Health, 1969a).

A second comment concerning the extent and growth of the drug situation came from the New York State Narcotic Addiction Control Commission. In a paper presented at the Conference On Prevention of Drug Abuse--the Challenge of the 70's, Berg (1970) pointed out that the last decade had seen a tremendous increase in the non-medical use of dangerous drugs and products, and that the situation had become a matter of utmost concern to many segments of the population.

Richard Blum, an acknowledged authority about the drug abuse situation, pointed out in Task Force Report:

Narcotics and Drug Abuse (1967) that no nationwide drug census had been taken and therefore, it was not possible to indicate actual incidence and prevalence figures. He did point out, however, that from available figures it appeared that drug misuse was increasing, especially among the school age population.

Popular publications have included articles about the existing drug use patterns among school age children. In the Saturday Review (September 21, 1968), Simon and Gagnon analyzed contemporary use of drugs and concluded that all indications are that the problem will not fade away, but rather, it will continue and expand and become a fact of life in America. So persistent was the situation that the authors stated that "the entire high school population is a part of a potential audience . . . (p. 61)."

Many figures have been estimated concerning the extent of the non-medical use of dangerous drugs. Fort (1969), drawing from his several investigations with youthful drug users, estimated that in 1962 there were approximately fifteen million illegal users of sedatives, stimulants, and narcotics. He further estimated that regular or repeating users of LSD type drugs, at that time, numbered in the hundreds of thousands.

Time (August 30, 1968) published National Institute of Mental Health figures for 1967 which estimated that approximately ten percent of all high school students had

smoked marihuana. However, those much closer to the situation in many communities estimated the figure to be much higher. The same Time article reported a Los Angeles Times survey of the Palos Verdes high schools that stated those schools "now have a proportion of drug-experienced students which police estimate at fifty percent and counselors put at seventy-five percent. An estimated third of the total are habitual users (p. 45)." Further and perhaps more striking, this survey showed that drug use had penetrated down as far as the sixth grade.

Bland (1960), while writing about the necessity for the schools to become more involved in drug education, presented non-referenced figures which indicated that the average incidence of marihuana smokers among the nation's high school students was about 10 percent. In some states and instances this figure was increased to an estimated fifty to seventy-five percent. Auster (1969) estimated that among middle and upper class adolescents, the following figures were expected: (a) marihuana users, with more than one experience, at fifty to sixty percent of the group; (b) amphetamine experimentation at twenty percent, with regular or frequent use between two to five percent; (c) hallucinogens use, not including marihuana, at ten to twenty percent; and (d) inhalent abuse at ten percent.

A structured, but minimal attempt at keeping valid statistics concerning narcotic users was made by the Bureau of Narcotics and Dangerous Drugs. According to that agency, in September, 1971, approximately 78,000 active narcotic addicts were recorded (National Education Association, 1972). However, because these statistics were based on the voluntary efforts and reporting of local law enforcement and private agencies, even the Bureau admitted that "these figures may not represent all the addicts . . . (Bureau of Narcotics and Dangerous Drugs, 1969, p. 12)." In a recent study of drug abuse (Maryland Commission to Study Problems of Drug Addiction, 1969), evidence was found that only two thirds of all Baltimore narcotic addicts known by state agencies were also known by the Baltimore police. The New York City Drug Control Commission alone recorded more than 60,000 active addicts within its jurisdiction (Medical Society of the County of New York). It can therefore be inferred that only a small percentage of actual narcotic addicts were known by the Federal Government in 1969. Louria (1968) suggested that a more reasonable estimate could be obtained by approximately doubling the Federal figures.

Yet, with all this interest and concern about drug abuse, no factual information was available concerning the use of dangerous drugs and other substances by the educable mentally retarded. It would appear to have been a serious

error to assume that some educable class students were not involved with drugs. It is with that situation that this proposal was concerned.

Statement of the Problem

This study was intended to determine the epidemiology of the non-medical use of dangerous drugs and other substances by educable mentally retarded students in the public schools of Alabama. More specifically, to what extent did educable mentally retarded students use marihuana, amphetamines, barbiturates, narcotics, hallucinogens and/or other dangerous substances? It was intended to determine prevalence figures of the use of these substances and to identify and analyze any differences in drug usage patterns in regards to:

1. male and female usage,
2. age group usage, and
3. usage in metropolitan, urban, and rural classes.

Need for the Study

A problem area in education for the educable mentally retarded is that of developing curricula and materials in accord with the changing needs and demands of society. Too often, special educators are faced with planning instructional programs for educable level students without information or knowledge pertinent to this task. Therefore,

it was necessary to document and characterize a contemporary situation in order that appropriate instruction can be planned and carried out.

Extremely little is known about who uses or abuses drugs and other substances illegally. The World Health Organization (1966), recognizing the need for drug research, suggested that the following approaches be taken:

1. fact finding with respect to incidence as regards sex, age, occupation, risk groups, and drugs used;
2. definitions of "use" and "abuse" in different cultures;
3. investigation of cause and effect relationships;
4. prevention by education and legislation.

Fort (1967), in a similar vein to the World Health Organization, suggested that research be undertaken in the following areas: estimates of the numbers of users; causes of drug use including socio-economic, cultural, historical, and psychological factors; and drug effects and educational programs. Perhaps too much emphasis has been placed on investigations of the chemical pharmacological, neuro-physiological and psychopharmacological aspects of drug use. Intensive and systematic research dealing with the sociological and psychological factors of drug use needs to be undertaken (Asaubel, 1966).

In an intensive examination of related literature, it was found that comparatively little epidemiological research had been done with high school age students. More significantly, no mention of the present epidemiological status of the use of dangerous drugs by educable mentally retarded students could be found. In fact, one large public school study specifically excluded special education high school classes (Joint Advisory Committee on Drug Abuse, 1970).

The Massachusetts Curriculum Guide for Special Class Teachers (Massachusetts Department of Education, in press), making reference to this lack of information, pointed out that there was no reason to assume that some retarded learners were not becoming involved with drugs. Perhaps full scale drug education programs should be established within special education programs. Perhaps only limited drug education programs should be instituted. Or perhaps any drug education program for the retarded would be inappropriate at this time. To make a decision on this, factual information relating to the epidemiology of the non-medical use of dangerous drugs and other substances among the educable retarded population was needed.

Significance of the Study

From the reliable data obtained and provided by this study, special educators should be able to determine the necessity for developing drug education programs to be used

with the educable retarded. Additionally, this study should create an awareness of the many considerations that must be dealt with in developing and establishing drug education programs for the educable retarded.

Further, this investigation should serve several additional functions:

1. Local school systems should find the information helpful in looking at educational programming for the educable retarded;
2. The findings should serve as a basis for the development of suitable curricula and materials;
3. The information provided by this study should assist those who are responsible for program development with the educable mentally retarded to determine the extent of any drug education program;
4. Institutions of higher education should be able to use the information from this study in reconsidering their course offerings in the area of curriculum for the mentally retarded.

Scope and Limitations of the Study

Table 1 shows that there were for the school year 1970-1971 seventy-four senior high level cooperative

classes for the educable mentally retarded in Alabama. These classes enrolled approximately 1,000 students. This study was conducted with fifteen of these classes, having a total enrollment of approximately 200. It was limited to those classes that were in operation during both the 1970-71 and 1971-72 school years.

A random sample of these cooperative classes was utilized, based on metropolitan, urban, and rural classifications. Further diversification resulted from the use of age and sex characteristics. No attempt was made to identify or analyze data for individual students, classes, or school systems.

Several limitations of this study included:

1. The use of an anonymous questionnaire to collect the required data limited the results of this study. It was expected that not all responses would be truthful; some students may not have wished to divulge their use of drugs, while others may have, for various reasons, overstated or exaggerated their involvement. However, because of the nature of confidentiality, it is believed that this approach presented the best method for collecting the data.
2. This was not an evaluation of the teaching abilities or styles of the cooperative class

TABLE 1

TOTAL COOPERATIVE CLASSES IN ALABAMA 1970-1971

The System	Systems	Classes	Type Classes					
			TMR ^a	EMR-JH ^b	EMR-SHC	SMD	LDE	EDf
City	21	40	0	13	26	0	0	1
County	21	68	7	11	48	1	1	0
Total	42	108	7	24	74	1	1	1

a	Trainable Mentally Retarded
b	Educable Mentally Retarded--Junior High
c	Educable Mentally Retarded--Senior High
d	Socially Maladjusted
e	Learning Disabilities
f	Emotionally Disturbed

Source: Alabama Department of Education. Directory Program for Exceptional Children and Youth 1970-71. Montgomery: The Department, 1971.

teachers. Nor, was it intended to determine the teachers' knowledge, or lack of knowledge, about their students.

3. Amphetamines and barbiturates, although very different in their make-up and effect, were investigated jointly. It was felt that many pill users, especially retarded pill users, did not know the type of pill they may be using. Therefore, no determination of the separate use of amphetamines and barbiturates was obtained.
4. No attempt was made to find out why certain retarded students used drugs and why others did not. Further, attitudes toward friends or acquaintances who use drugs were not explored.
5. Finally, information provided by this study was confined to interpretations of the drug abuse situation among cooperative class students in Alabama. This information was not applied to other age groups, circumstances or populations. Generalizations were not made from group results to individual classes or students.

Definition of Terms

Words often present a variety of meanings, connotations, and interpretations. In an attempt to prevent any misunderstanding, the following words were defined for the purpose of this study:

Amphetamines "have chemical properties that stimulate the actions of the central nervous system (American Medical Association, 1971a, p. 1)" and "induce a transient sense of well-being, self-confidence, and alertness. They are used to combat fatigue, curb appetite, and reduce mild depression (National Institute of Mental Health, 1970c, p. 1)."

Barbiturates were defined as "the main depressant drugs used in medical practice today to sedate or to calm patients and/or to induce or produce sleep (American Medical Association, 1970b, p. 1)." They, essentially, slow down the actions of the central nervous system.

Dangerous drugs were referred to by Johnson and Westman (1968) as substances with the capability to alter; ". . . one's mental state, with self-destructive physical, emotional, or social consequences, often in violation of an established law or social value (p. 648)."

LSD was considered to be the chemical lysergic acid diethylamide "capable of provoking changes of sensation, thinking, self-awareness, and emotion (National Clearing-house for Drug Abuse Information, 1971b, p. 12)."

Essentially, LSD is considered a hallucinogenic agent.

Marihuana referred to a dried plant preparation of the leaves and flowering tops of the hemp plant, Cannabis Sativa. Effects vary widely with it being considered a mild hallucinogenic, functioning as either a stimulant or a depressant (National Clearinghouse for Drug Abuse Information, 1971b).

Other Substances referred to many substances " . . . obviously never meant to be taken by man (National Clearinghouse for Drug Abuse Information, 1971b, p. 26)," or certain over-the-counter preparations that are taken in excess. These included, but were not limited to model airplane glue, gasoline, paint thinner, cough syrup, nutmeg, lighter fluid, aerosol spray cans, and cleaning fluid.

Educable Mentally Retarded was defined by Kirk (1972) as one ". . . who is considered to have potentialities for development in three areas: (a) educability in academic subjects of the school at a minimum level, (b) educability in social adjustment to a point where he can get along independently in the community, and (c) minimal occupational adequacies to such a degree that he can later support himself partially or totally at the adult level (p. 164)."

In Alabama children with a chronological age of six to twenty-one, a mental age of four or above and an

intelligence quotient within the range of 56-80 were classified as educable mentally retarded (Alabama Department of Education, 1964).

Cooperative Class in Alabama, and for the purpose of this study, was a high school class for educable retarded students that was jointly sponsored and financed by the Department of Education and the Division of Vocational Rehabilitation (Owens, 1970).

A Metropolitan classification was applied to all school systems within which the majority of the population was considered in an urbanized area, as identified by the 1970 census (U. S. Bureau of the Census, 1970, Appendix A).

An Urban classification was applied to all city school systems, with the exception of those systems included in the metropolitan category.

A Rural classification was applied to all county school systems, with the exception of those systems included in the metropolitan category.

Methodology

Procedures. A comprehensive survey and review of literature and research related to drug use was undertaken. This included, but was not limited to, other related epidemiological studies, characteristics of drugs and drug users and interest in drug education.

A student response questionnaire was developed and utilized to obtain the necessary information. This form was completely anonymous in nature, only identifying students in the characteristics of age and sex. The necessity for reading ability by the students was eliminated by having all material and directions read by the teacher administering the forms.

Complete and comprehensive directions for administering this form were developed and made available to the teacher. These directions included procedures to assure the students of the anonymity of the questionnaire and to encourage their truthful participation. These materials were submitted to the members of a dissertation research seminar for review and suggestions. The materials were also submitted to the members of the writer's Doctoral Advisory Committee for review, comments, recommendations, and revisions.

Methods of gathering data. An anonymous questionnaire, involving student response, was utilized as the primary data collecting instrument in this study. Steps that were followed included:

1. A letter explaining the nature of the proposed study and requesting participation was sent to the Superintendents of Schools of the population classes.
2. Following receipt of permission from the

Superintendents, a complete packet of materials was forwarded directly to the teachers of the sample classes. These packets included a cover letter explaining the purpose of the study, sufficient copies of the Student Information Form to allow one for each class member, complete instructions for administering the forms, and a stamped, return addressed envelope.

3. All materials were returned to the investigator for tabulating, analyzing, and summarizing.

Selection of the sample. The population consisted of all senior high level cooperative classes for the educable mentally retarded in Alabama that were in operation during the school year 1971-72. Classes that agreed to participate were assigned to one of three groups: (a) metropolitan, (b) urban, or (c) rural. From each of these groups, five classes were randomly selected to serve as the sample members, resulting in three groups as follows:

1. a metropolitan group consisting of five classes;
2. an urban group consisting of five classes;
3. a rural group consisting of five classes.

Cooperative class eligibility required, among other

criteria, that participating students be at least fourteen years of age, therefore, the chronological age range of the students involved was between fourteen and approximately eighteen.

Treatment of the data. Following the return of all questionnaires from the sample classes, the responses were tabulated and analyzed. The data collected from the questionnaires were reported for each of the three samples groups. This included comparison by age and sex of the students within the sample groups. Comparison of the use of dangerous drugs and other substances between the groups was made. No attempt was made to identify the responses of individual students, or to report data for particular classes or school systems. The intent was to focus upon the collective information of the classes included in the study. This approach was necessary to comply with the anonymity factor guaranteed the respondents and the superintendents of schools.

CHAPTER II

Review of Related Literature

In order to investigate the drug use situation, it was necessary to understand basic facts about the different types of drugs that are most often used by adolescent drug users. The material was researched in terms of the types of drugs, some of their intended and/or approved uses, and their effects, physically and psychologically.

Drugs: Types and Effects

Marihuana. Marihuana is a dried plant material made from the flowering tops and leaves of the female hemp plant, Cannabis Sativa. The parts with the highest delta-9-tetrahydrocannabinol content, considered to be the basic active ingredient in marihuana and related preparations, are the flowering tops. The leaves contain a smaller amount and the stalks and seeds have little or no tetrahydrocannabinol content (National Clearinghouse for Drug Abuse Information, 1971b). According to the World Health Organization the official international term for such preparations is "cannabis"; the term marihuana is primarily used in the United States and in England (American Medical Association, 1967a). Other related, but more

potent and less known, preparations include, Ganja, Charas, and Hashish. Ganja is derived from the tops and resin of a select and specially cultivated and harvested grade of the Cannabis Sativa. Charas is the pure, unadulterated dark brown resin obtained from the tops of the finest female hemp plants, generally those grown to prepare Ganja. Hashish is a powdered, sifted and weakened form of Charas. In comparison to one another, marihuana is the least potent, followed by Hashish, Ganja and Charas in increasing order of strength (Nowlis, 1967; National Clearinghouse for Drug Abuse Information, 1971b).

The plant grows wild in almost any climate and/or soil condition throughout many parts of the world. It grows especially well in India, the Middle East, Africa, and Mexico. The potency of marihuana varies greatly, depending upon where it is grown, whether it is wild or specifically cultivated, how it is prepared for use and how it is stored. Marihuana that grows wild is relatively weaker in its effects when compared to the cultivated varieties. The plant grown in the United States is low in tetrahydrocannabinol and therefore, is much weaker than Mexican, Lebanese, or Indian varieties (National Clearinghouse for Drug Abuse Information, 1971b).

Marihuana was one of man's earliest drugs, having been known to mankind for nearly 5,000 years (Einstein, 1970; National Institute of Mental Health, 1970b). The

name hashish is derived from its use by Hasan and his Assassins, prior to the First Crusade (Griffenhagen, 1969). Its effects were noted by the Chinese Emperor Shen Nung in 2737 B. C. Writing in a pharmacy book, he prescribed its use for "female weakness, gout, rheumatism, malaria, beri-beri, constipation, and absentmindedness (Griffenhagen, 1968, p. 25)." Very early in history, cannabis was used by the people of India as a general type of medicine (National Institute of Mental Health, 1969b).

In the United States, prior to the passing of the Marihuana Tax Act in 1937, marihuana had been medically used as an antibiotic, an analgesic, a pain reliever, an aid for sleep, a poultice for corns, a therapeutic aid in certain psychiatric illnesses (Griffenhagen, 1968; Bureau of Narcotics and Dangerous Drugs, 1969). The development and substitution of other drugs have completely eliminated any acceptable medical use of marihuana in this country today.

When smoked, marihuana quickly enters the bloodstream and acts primarily on the central nervous system affecting the users' mood and thinking. Just how the drug effects the body, what pathways and actions it takes to the brain, and how it produces its effects are not well understood and in need of research at this time. Because it may cause hallucinations when used in very large doses, marihuana is technically classified as a mild

hallucinogen (National Institute of Mental Health, 1970b). Its' effects on the emotions and senses vary widely, depending on the amount and strength of marihuana used, the social setting in which it is taken and the anticipated effects of the user (Bureau of Narcotics and Dangerous Drugs, 1969). It can be either a stimulant or depressant, varying with individuals and situations (National Clearinghouse for Drug Abuse Information, 1971b).

Usually the effects are felt in a very few minutes and may persist anytime from two to twelve hours. Immediate physical effects most frequently reported include reddening of the eyes, increased heart and pulse rates and a persisting cough due to inflammation of the mucous membranes and bronchial tubes. An insatiable hunger, some loss of coordination of the limbs, sleepiness, lowering of the body temperature and a change in blood sugar levels have been reported for some individuals (National Institute of Mental Health, 1970b).

The psychological effects of marihuana are variable. They may include distortions of hearing, vision, timing and spatial orientation. A minute may seem like an hour. Something very near may seem far away. Sounds and colors often become highly intensified. Thought processes may become dreamlike or provide a feeling of being above reality. Individuals have been noted to exhibit uncontrollable laughter or crying, often with no reason

(National Institute of Mental Health, 1970b). Einstein (1970) points out that increased dosages may result in illusions, hallucinations, and delusions which may contribute to some antisocial behavior. Other research (National Institute of Mental Health, 1970b) reports that hallucinations and delusions are possible, but rare. On occasion, the user may develop unfounded suspicions and react anxiously and aggressively.

Marihuana does not cause physical dependence and therefore is not considered addicting. This means that the body does not become dependent or require continuing use of the drug. There is no evidence that a state of tolerance is developed. Withdrawal from the drug does not cause the characteristic abstinence symptoms associated with narcotic withdrawal.

Amphetamines and other stimulant drugs. These are a group of drugs which directly stimulate or increase actions of the central nervous system. Generally, they increase alertness, self-confidence, and induce a sense of well being. Many stimulants are known, including: amphetamine, dextroamphetamine, methamphetamine, and cocaine.

Amphetamines were synthesized in 1927 by a California pharmacologist, who turned his finding over to a large pharmaceutical firm. There, further investigation, identified that amphetamines could shrink the nasal

membranes and lead to the development of the nasal inhaler (Griffenhagen, 1969).

Continuing investigations of amphetamine found it to be effective in retarding fatigue during dangerous and prolonged tasks, in curbing the appetite and in treating some cases of minor mental depression. The American Medical Association (1966) identified uses of amphetamine and amphetamine type drugs as follows:

1. Control the symptoms of narcolepsy.
2. Control certain hyperkinetic behavioral disorders of children.
3. Relieve or prevent fatigue in individuals with deteriorated psychomotor performance.
4. Treat mild depression.
5. Antagonize the pharmacological actions of depressant drugs (e.g., barbituates, alcohol).
6. Control appetite.
7. Induce insomnia and counteract fatigue in persons occasionally required to perform mental or physical tasks of long duration.
8. Enhance the action of analgesic drugs (p. 1024).

They have also been used to treat Parkinson's Disease, and petit mal epilepsy (Einstein, 1970).

According to current research findings, amphetamine compounds resemble the natural body hormones, epinephrine and norepinephrine. Either by mimicking these hormones and their effects on nerve endings, or by causing increased release of them, amphetamines stimulate areas of the nervous system associated with blood pressure, heart rate, and metabolic action (Einstein, 1970). Appetite is markedly decreased. The senses are highly stimulated and a transient state of well being, almost euphoric, is attained. Excessive

stimulation of these actions is normal, and often desirable, under emergency and stress conditions; amphetamines artificially intensify and prolong these conditions (National Institute of Mental Health, 1970c; National Clearinghouse for Drug Abuse Information, 1971b). Einstein (1970), in discussing the actions associated with stimulant drugs, points out that the respiratory system is stimulated and an increase in wakefulness occurs.

Usually amphetamines are swallowed in the form of capsules or tablets. Crystal methamphetamine and cocaine are sometimes inhaled through the nose. They can also be injected directly into veins, causing the effects to occur more rapidly, and more intensely.

Amphetamines differ from other stimulants primarily because excessive use leads to drug tolerance, requiring that increased doses be utilized to obtain the original effect. Although tolerance develops slowly, this progressive increase in dosage may eventually allow the user to tolerate amounts many times greater than a therapeutic dose (American Medical Association, 1966). Since all parts of the nervous system do not become tolerant at the same rate, the user may continue to experience increased nervousness and insomnia as more and more amphetamines are taken (Eddy, Halbach, Isbell, and Seevers, 1965).

Excessive use of amphetamines does not lead to physical addiction, but rather to a psychological or emotional dependence. There is no evidence of a characteristic and reproducible withdrawal syndrome; e.g., convulsions, seizures, and so forth. However, when the drug is suddenly and completely withdrawn, the fatigue that follows may become exaggerated. According to Eddy (1965) the person may feel totally depressed, both psychologically and physically. This depression may greatly tempt the person to revert to another dose of amphetamines.

In addition to those diseases which accompany the often unsterile injection of materials into the body, such as viral hepatitis, excessive amounts of amphetamines can cause certain medical problems. According to Einstein (1970) the excessive user may be confronted with headaches, irritability, palpitations, dizziness, nausea, vomiting, diarrhea and abdominal cramps. With no desire for food, the person may suffer from malnutrition. There is some limited research evidence of liver damage and brain damage from use of enormous quantities of amphetamines (National Clearinghouse for Drug Abuse Information, 1971b). Very large amounts can lead to amphetamine psychosis characterized by visual and auditory hallucinations, delusions, and mood changes. Social and moral deterioration is often characteristic of heavy users. They may become overactive, irritable, talkative, suspicious, and, occasionally,

violent. This can lead to unpredictable, assaultive, belligerent, and/or homicidal behavior.

Cocaine is a stimulant drug derived from the coca plant which grows mainly in the uplands of Bolivia, Peru, and Chile. It has been used for centuries by Andean Indians as an antifatigue and anti-hunger measure (Griffenhagen, 1968). Initially introduced into Western medicine as a treatment for morphine addiction, and as a local anesthetic, cocaine abuse was considered a major problem at the turn of the century. At present, effective synthetics without the unfavorable side effects of cocaine, have been developed and have diminished the medical use of cocaine.

In large doses, the effect of its use are very similar to the effects produced by methamphetamine, although shorter in duration. According to Kalant (1966), effects include paranoid delusions, auditory visual and tactile hallucinations, digestive disorders, nausea, emaciation due to loss of appetite, and sleeplessness. Since the effects are of short duration, use of cocaine alone is rare. A popular combination is the "speedball," which combines cocaine with heroin. It is claimed that this approach extends and smooths the heroin effect (Nowlis, 1967).

Cocaine is not physically addicting and there is no research to indicate that it leads to the development of tolerance. As with amphetamines, psychic dependence may

result with cocaine use. Withdrawal may bring on severe depression and persisting delusions, causing the person to continue its use.

Barbiturates and other sedative drugs. Use of barbiturates and other sedative type drugs results in an effect directly opposite to that of amphetamine usage; amphetamines stimulate the central nervous system while barbiturates depress, or slow down the actions of the central nervous system. Barbiturates constitute the largest group of sedatives and are the main depressant drugs used medically to sedate or calm patients and/or to induce sleep (American Medical Association, 1970b).

Barbiturates were introduced into medicine in 1903 by two German scientists who developed Veronal. This drug was suggested as a means of depressing the central nervous system ranging in effects from slight sedation to deep anesthesia. Since that time, the barbiturates, which lend themselves to almost infinite chemical variations, have increased in number so that well over a thousand derivatives have been developed; about fifty of these preparations have been marketed for clinical use (Griffenhagen, 1969).

When administered under medical supervision, barbiturates have proven to be effective therapeutic drugs for many medical problems. They are used as sleep inducers, as tranquilizers, as pre-anesthetic

medication, as a control for convulsions resulting from tetanus, epilepsy, and usage of other drugs, and as a therapeutic agent in psychiatry (Long and Penna, 1968). They have additionally been used in cases of hyperthyroidism, peptic ulcer, and high blood pressure (Bureau of Narcotics and Dangerous Drugs, 1969; National Clearinghouse for Drug Abuse Information, 1971b). Used appropriately, they reduce tension and anxiety and can help achieve a more functional state of behavior.

A depressant, barbiturates may act on nerves, skeletal muscle, smooth muscle, and cordica muscle. Depending upon the strength or amount of the dosage, the drug can produce an effect varying from mild sedation to coma. Long and Penna (1968) present three different classifications of barbiturates based upon the duration of their action:

1. Those where the effect is intermediate both in terms of starting time and duration.
2. Those where the effect starts slowly, but is of long duration.
3. Those where the effect starts very quickly, and is short acting.

The long-acting barbiturates are less apt to be abused than the short-acting ones (American Medical Association, 1965).

Although physical dependence does not develop with the dosages normally used in medical situations, barbiturates are physically addicting when used in excessive doses. Einstein (1970) points out that excessive use can lead to a psychological dependence or habituation. A tolerance is also developed and, with small doses, will become evident within seven days. The barbiturate user will find that an increased dosage is necessary to obtain continued, identical effects. There is, in contrast with tolerance to other drugs, a limit to the dose to which a person can become tolerant. This limit varies widely from individual to individual. Following withdrawal of barbiturates, tolerance is lost and may result in increased sensitivity to the drug (Eddy, et al., 1965).

Abrupt withdrawal from barbiturates by a person who is physically dependent results in a definite abstinence syndrome. Withdrawal symptoms begin to appear within twenty-four hours of cessation, reaches peak intensity in two to three days and then slowly subsides. Eddy (1965), in presenting and ordering the various characteristics associated with withdrawal, included:

. . . anxiety, involuntary twitching of muscles, tremor of hands and fingers, progressive weakness, dizziness, distortion in visual perception, nausea, vomiting, insomnia, weight loss, a precipitous drop in blood pressure on standing, convulsions of a grand-mal type, and a delirium resembling alcoholic delirium tremens or a major psychotic episode . . . (p. 725).

These temporary psychoses have resulted in paranoid reactions schizophrenia-like reactions including delusions and hallucinations, withdrawn states, and characteristic panic occurrences.

Chronic and excessive dosages of barbiturates causes the user to appear intoxicated. Slurred speech, uncoordinated movements, an unsteady gait and a loss of balance may occur. Mental ability may also be impaired including loss of emotional control, poor judgment and perception and confused actions. Some persistent sedative action may continue causing the person to be more accident-prone (Eddy, et al., 1965; Einstein, 1970). In summary, the clinical characteristics of barbiturate abuse are very similar to those of alcoholic abuse (Eddy, et al., 1965).

Additional and more dangerous effects can also result from barbiturate dependence. The perception of time is distorted under barbiturate intoxication. The addict, oblivious to time and actions, may take more pills. If this is repeated a few times during a relatively short period of time, a poisonous overdose may be consumed. The overdose results in respiratory cessation and the addict is asphyxiated. Although many of these deaths are suicidal, accidental deaths due to an overdosage are not uncommon, including those related to automobile accidents, fatalities and injuries, as a resulting of poor

motor coordination have also been noted (Einstein, 1970; Eddy, et al., 1965; Griffenhagen, 1968).

LSD. LSD (lysergic acid diethylamide) is an odorless, colorless, tasteless drug derived from ergot, the parasitic fungus that grows on wheat, rye, and other grasses. Because its' use results in hallucinations, illusions, or distortions of perception and thinking--what and how a person sees, hears, touches, and smells, it is classified as an hallucinogen. LSD was synthesized by Dr. Alber Hofman and his colleagues at the Swiss pharmaceutical laboratories of Sandoz, Ltd. in 1938. Five years later, Hofman accidentally discovered the potent ability of LSD to alter perception and cause psychological effects. Griffenhagen (1969) presented Hofman's laboratory report for the day of discovery which stated:

I had to go home because I experienced a very peculiar restlessness which was associated with a slight attack of dizziness. At home I went to bed and got into a not unpleasant state of drunkenness which was characterized by an extremely stimulating fantasy. When I closed my eyes I experienced fantastic images . . . (pp. 32-33).

LSD has been tested widely in the treatment of mental and emotional illness, including alcoholism, childhood autism, sexual disorders, schizophrenia, psychosis, personality disorders, and drug addiction. It has additionally been used therapeutically in the areas of mental retardation, terminal cancer and criminal rehabilitation (Einstein, 1970; National Institute of Mental

Health, 1970a). Discussing these uses of LSD, Richards, Joffe and Spiratto (1969) point out that information concerning the therapeutic benefits of LSD is very incomplete. They go on to state that until the:

. . . facts about adverse reaction are better known, the use of LSD must be considered a high risk . . . so far, the results are not established beyond reasonable doubt to warrant releasing LSD as a legal prescription drug for medical use (p. 3).

The immediate physical effects of LSD resemble the effects of other drugs and include dilated pupils, increased blood pressure and heartbeat, a rise in temperature and a feeling of being chilly. On very infrequent occasions, convulsions have been noted (National Clearinghouse for Drug Abuse Information, 1971b). An average dose, somewhere between 50 to 200 micrograms, usually causes effects in forty-five minutes or less and lasting from eight to twelve hours. The physical effects disappear as the action of the drug decreases. Typically, it is taken in pill or capsule form, although users have experimented with many other approaches, including sniffing and intravenous dosage (American Medical Association, 1967b). A very popular approach is to place a measured amount of the liquid form of LSD on a sugar cube; this sugar cube may then be stored and used when desired. Tolerance to LSD develops quickly, requiring the user to build up or increase the dose; this tolerance is usually lost within two or three days following cessation of use. Regular use of LSD does not lead to

physical addiction; in other words, no withdrawal symptoms result with discontinuance. However, if the experience under LSD is pleasant and enjoyable, psychological dependence may occur (American Medical Association, 1967b; Eddy, et al., 1965).

The psychological effects of LSD vary considerably, being dependent upon the amount taken, the personality of the person, the setting in which it is taken, and the expectation of the user. Effects in the same person can be notably different during the various stages of the drug's effects and from one use to another. Marked perceptual distortions are typical. Vision is significantly altered, with the user seeing unusual patterns, experiencing changes in depth perception, and perceiving objects differently. According to Einstein (1970) hallucinations are rare, but illusions and delusions do occur. Sensory experiences may merge or intermingle; for example, sound may be seen or felt. The sense of time is very effected, with the user not aware of how much time is passing even though there is no loss of consciousness.

Abrupt and frequent mood changes may occur ranging from anxiety to euphoria. A common reaction is the feeling of two opposite emotions simultaneously, such as feeling relaxed and tense or depressed and elated at the same time (National Institute of Mental Health, 1970a). A sense of depersonalization or loss of the concept of self

or separateness may be experienced, with the user becoming highly aware of his internal organs and body processes. Some users become spatially disoriented and believe they can fly or float. Often a sense of greater awareness, capacity and invulnerability occurs. Coupled with the lessened and/or distorted perception of objects that exist, the person under the influence of LSD is more susceptible to personal injury (Bureau of Narcotics and Dangerous Drugs, 1969; American Medical Association, 1967b).

There has been much debate about LSD, revolving around (a) the extent, if any, of any harmful affects associated with its use, and (b) whether or not there are any benefits to its use (Richards, et al., 1969). According to the American Medical Association (1967b), three complications appear to be most prevalent:

1. Recurrence of hallucinations and other effects after the individual has stopped using LSD. This has occurred days, weeks, and months later.
2. Because of the distortion of time and because the drug's actions cannot be stopped, panic among users is frequent.
3. The development of psychosis, both short and long-range, has happened for some users. It usually involves a prepsychotic

person or a person with a record of previous psychosis.

Other claims have been made that LSD causes both defect and chromosome breakdown. In all of these situations and for all of these claims, accurate data and knowledge for making conclusions is incomplete. Further experimentation and research is necessary in all facets of LSD usage.

Narcotics. The term narcotic generally refers to opium and drugs made from opium, such as heroin, codeine and paregoric; additionally a number of defined synthetic drugs are classified as narcotics or opiates. These drugs are widely used in medicine as pain relievers and include some of the most valuable medicines known to man. Generally, any discussions of narcotics refer to heroin and are implied to the other drugs. Heroin, which is up to ten times as potent as morphine, accounts for 90 percent of the narcotic addiction problem in this country (National Clearinghouse for Drug Abuse Information, 1971b). Morphine, the standard by which pain relieving drugs are evaluated, takes second place to heroin as a drug abuse, preferred when heroin is difficult to obtain (Bureau of Narcotics and Dangerous Drugs, 1969). Codeine based cough preparations and paregoric are less potent and addictive than morphine or heroin, but have been abused by some individuals. Some of the synthetic, morphine-like drugs that have found

illegal use include hydrocodone, hydromorphone, meperidine, and oxycodone.

The natural narcotic drugs are obtained or derived from the juice of the base of the opium poppy flower. This plant grows well in average sunshine and with limited moisture. It is grown in many countries including Yugoslavia, Iran, India, China, Laos, Thailand, in some Central and South American countries, and with the bulk being grown in Turkey (Preble and Casey, 1969).

In discussing the history associated with opiates, Griffenhagen (1969) identifies their use among people of ancient civilizations. Homer's Illiad describes it as "inducing the sense of evil" and the Sumereans referred to a "joy plant," thought to be opium. Information about opium may have passed from the Sumereans to the Babylonians to the conquering Persians, and eventually, to the Mediterranean lands. Arab traders then spread its use as a medicinal agent to Eurpoe and Asia (Taylor, 1963). Opium addiction of epidemic proportions spread throughout China, despite prohibiting edicts by the ruling emperors. In 1839, an attempt to stop the importation of opium into China by Western countries, lead to much tension, and, indirectly, to the "Opium War" of 1840-42 (Griffenhagen, 1969).

In America, opium addiction was known before revolutionary times, but it did not become a recognized

problem until the advent and subsequent unreserved medical use of morphine. Narcotic addiction became so common during the American Civil War, as a result of unrestricted use in military medicine, that it was referred to as the "army disease" (Griffenhagen, 1969). When heroin was commercially produced by the Bayer Pharmaceutical Company of Germany in 1898, it was proposed as a cure for morphine addiction. However, it was soon discovered that heroin not only did cause addiction but that addiction occurred faster and that was more difficult to cure than morphine addiction. In the early nineteen hundreds, with a much smaller population in the United States than today, there were an estimated 1,000,000 narcotic users in America (Einstein, 1970).

Therapeutically, natural and synthetic morphine-like drugs present the most effective pain relievers known. They are most important to the physician for treatment of acute pain, such as that associated with surgery, fractures, and pains. They are also limitedly used to reduce pain in the terminal stages of illnesses such as cancer (Bureau of Narcotics and Dangerous Drugs, 1969). In the United States, it is presently illegal to use heroin for medicinal purposes.

The narcotic drugs depress the central nervous system to produce a marked reduction in sensitivity to pain, create drowsiness, induce sleep, and reduce the sex

drive, hunger and thirst, and physical activity. Some side effects that have been noted include nausea, vomiting, constipation, itching, constriction of pupils, respiratory depression, sniffing, and flushing (National Clearing-house for Drug Abuse Information, 1971b). Although not directly caused by the use of narcotics, statistics indicated that the addict's health is often bad, with malnutrition being significant, and that a shortened life span can be expected (Bureau of Narcotics and Dangerous Drugs, 1969).

Emotionally, heroin produces a feeling of relaxation and a sense of euphoria. The user feels to be in a pleasant, dream-like state or of being "high." Heroin reduces sensitivity to both psychological and physical stimuli, suppresses tensions, eases fears, and provides relief from worries. It seems to dull reality and assist the user in feeling more self-confident. The addict is often lethargic and indifferent about his personal and social situation.

According to Eddy (1965) opiate drug dependence is characterized by:

- (1) Development of tolerance that requires an increase in dosage to obtain the initial pharmacodynamic effects.
- (2) Strong psychic dependence, which manifests itself as an overpowering drive or compulsion to continue taking the drug and to obtain it by any means, for pleasure or to avoid discomfort.
- (3) An early development of physical dependence . . . (and) requires a continuation of

administration of the same drug, or an allied one, to maintain a semblance of homeostasis and to prevent the appearance of the symptoms and signs of withdrawal . . . precipitates a definite, characteristic and self-limited abstinence syndrome (p. 724).

Withdrawal symptoms appear within a few hours of the last dose, reach peak intensity in twenty-four to forty-eight hours, and then subside spontaneously. Most severe symptoms are gone within ten days, although some may persist for a longer period. Features of withdrawal include anxiety, restlessness, body aches, insomnia, yawning, tearing from the eyes, runny nose, perspiration, dilation of the pupils, gooseflesh, hot flushes, nausea and vomiting, diarrhea, increased body temperature and respiratory and blood pressure rate, abdominal and other muscle cramps and jerks, loss of appetite, dehydration, loss of body weight and chills (Eddy, et al., 1965; Einstein, 1970; National Clearinghouse for Drug Abuse Information, 1971b). Under proper medical care, the addict going through withdrawal, can be medically assisted so as not to experience these symptoms severely.

Other substances. Many volatile substances, obviously never meant to be taken by man have been experimented with and abused. According to the National Institute of Mental Health (1971) these substances can be considered in three groups:

1. Commercial solvents that include volatile chemicals and that are available in model airplane glue, plastic cements, paint thinner, gasoline, cleaning fluid, nail polish remover, and lighter fluid.
2. Aerosol spray can propellants that contain chlorinated or fluorinated hydrocarbons, including insecticides, deodorants, glass chillers and hair sprays.
3. Anesthetics, including chloroform, ether, and nitrous oxide, that are found in tracer gas, pre-ignition reducer for racing cars, and in cream whip propellant.

Generally, these substances are abused by pouring them on a rag or into a plastic bag and inhaling the fumes. Some aerosols are directly breathed in. Physical effects include immediate irritation of the nasal passages, nausea, dizziness, shakiness, and muscle spasms. Over prolonged periods of use, problems such as significant weight loss, kidney and liver damage, heart complications, bone marrow depression, lung damage have been reported, although not conclusively (National Clearinghouse for Drug Abuse Information, 1971b; National Institute of Mental Health, 1971).

Psychologically, the effects of the inhalable substances are drunkenness, sleepiness, disorientation,

exhilaration, euphoria, and stupor. On some occasions, the user may manifest impulsive and exciting behavior. Some feeling of hallucination and of being in a dreamlike state may develop (National Institute of Mental Health, 1971; Preble and Laury, 1967). These effects occur for about 30 to 45 minutes, to an hour or two, depending on the dosage.

Under the effects of inhalation, the individual may show impaired motor functioning and judgment. During this period of time accidents, with suffocation being most prevalent, have repeatedly been reported about youthful inhalers (Kuperstein and Susman, 1968). Physical dependence and withdrawal symptoms do not appear to result from solvent inhaling, although tolerance is achieved, requiring the individual to use more and more solvent to obtain the desired sensations. Although not documented by research, the American Medical Association (1970c) indicates that psychological dependence may develop if the practice is continued over a prolonged period.

Some over-the-counter medicines and preparations have been taken in excess and become substances of abuse. These include cough syrups, non-prescription sedatives and the stay-awake products. Abuse of nutmeg and mace have been reported. When these spices are taken in large amounts, a drunken, confused state can occur. Kidney irritation has been identified as a side effect to abusing these spices. Some wild plants, such as

belladonna and Jimson weed, have been used as intoxicants and mild hallucinants. These powerful plants, depending upon the amount ingested, can result in death (National Clearinhouse on Drug Abuse Information, 1971b).

Summary of drug characteristics. Numerous substances which modify moods, alter perceptions and change behaviors have been involved in the drug abuse situation. These drugs varied greatly in regards to composition, action and effect. Included in these variations were differing characteristics involving physical and mental actions. Table 2 presents a summation of the essential factors associated with these drugs.

Educational Concerns

Many persons and agencies, both within and without the realm of education, have published articles concerning drug education programs within the schools. A review of ERIC abstracts through December, 1970 identified thirty-six references concerning drug abuse programs (American Association of School Administrators, 1971).

Much of this concern has resulted from the changing patterns of drug use. Brotman and Freedman, in an office of Juvenile Delinquency and Youth Development publication (1968) differentiated between the drug abuse pattern of twenty years ago and that of today. These changes included: an increased involvement by youths with drugs, verified by the increase of narcotic charges against

Table 2

SUMMARY OF ESSENTIAL FACTORS OF DRUGS

Drug	Addiction	Habituation	Tolerance	Withdrawal Symptoms	Mental Actions
Amphetamines and Cocaine	No	Yes	Yes	Yes	Elevation, Intoxication
Barbiturates	Yes	Yes	Yes	Yes	Sedation, Intoxication
Heroin	Yes	Yes	Yes	Yes	Euphoria, Intoxication
LSD	No	Yes	Yes	No	Mood and Perception Changes
Marihuana	No	Yes	No	No	Mood and Perception Changes, Intoxication
Vapors	No	Possible	Yes	No	Intoxication

individuals under 18; an increased drug use by members of lower socioeconomic classes; an apparent concentration of narcotic use by racial and nationality minority members; a concentration of use in large urban areas; and a growing tendency toward multiple drug use and abuse. Ball (1965) also commented on the drug use pattern among minority groups. In an article discussing legal factors related to drug use, he commented that "there has been a notable increase in the number of addicts from the minority groups in American Society (p. 203)."

Others, however, did not accept drug abuse as only significant among the lower classes or minority groups. They pointed out that there is no longer a typical drug abuser. Cwalina (1968) felt that many factors influenced contemporary drug users. There were great variations among drug users in regards to motivation, education, status in society, race, creed and economic status. Substantiating this point, Berg (1970) pointed out that what had been a predominantly inner city problem, drug use had suddenly embraced and affected all sectors of American society.

According to Salisbury and Fertig (1968), California sociologists, typical teen-age drug users were likely to be: white; upper-middle and middle-class; affluent; tend to be humanitarian in their views; value self-exploration and individuality; and are rarely against our society in a revolutionary way. Many of their views about the value of

self-expression, creativity and concern for others have been fostered and emphasized by their parents. The social stereotype that presented young drug users in terms associating alienation and emotional disturbance, in the view of Salisbury and Fertig, was a myth with little evidence for support.

Barter and Werme (n.d.) wrote that contemporary drug use was not the inevitable outcome for members of minority groups. Additionally, drug misuse could no longer be considered only a phenomenon of the lower class or of minority groups. Significantly more and more of the "privileged" youth of our country were involved in experimentation with all types of drugs.

The thrust of the Federal government in promoting drug education could be measured inferentially from the number and efforts of involved Federal agencies and departments. The National Clearinghouse for Drug Abuse Information, operated by the National Institute of Mental Health, served as the coordinating agency on behalf of the Federal agencies engaged in drug abuse education. They included: The Department of Defense; the Department of Health, Education and Welfare; the Department of Justice; the Department of Labor; and the Office of Economic Opportunity (Richards, 1969).

Activities and services of the Clearinghouse took several forms; distribution of numerous publications,

documents and other information materials in all media; referral of inquiries to appropriate Government, state or private agencies; answering of specific and technical inquiries; loan of films and other media; operation of a computerized information retrieval system on drug abuse; and the provision of consultation and technical expertise to concerned groups and individuals (National Clearinghouse for Drug Abuse Information, February, 1971).

An outstanding publication distributed by the Clearinghouse that exemplified the Federal interest in drug abuse education was the comprehensive Resource Book for Drug Abuse Education (National Institute of Mental Health, 1969b). This publication was a result of the Drug Abuse Education Project carried out by the American Association of Health, Physical Education and Recreation, and the National Science Teacher Association of the National Education Association under contract for the National Institute of Mental Health. It presented, in three sections: (a) Teaching About Drugs, (b) Facts About Drugs, and (c) Supplementary Reports on Drugs;

. . . summaries of factual information on the major drugs of abuse, and techniques and suggestions that experienced drug educators have found helpful in communicating with young people who are thinking about drugs or have already experimented with them. An effort has been made to include papers by medical authorities and social scientists reflecting a range of views regarding drugs (p. 1).

Other Federal publications showing the government's interest in fostering drug education programs included:

1. A Federal Source Book: Answers to the Most Frequently Asked Questions about Drug Abuse
2. Selected Drug Abuse Education Films
3. Selected Drug Education Curricula Series
4. Drug Dependence and Abuse: A Selected Bibliography (National Clearinghouse for Drug Abuse Information, Mimeographed).

The creation of the Drug Education Curricula Series demonstrated the high priority given to drug education by the Federal government. Under the auspices of the White House an Interagency Federal Committee was established with the charge of making available to the nation's schools curricula for drug education and the prevention of drug abuse. As a beginning step, an Interdisciplinary Panel of non-government professionals was established to review some of the available state and local school systems drug abuse curricula (National Clearinghouse for Drug Abuse Information, n.d.). This panel, while not recommending material for adoption but as resources, selected eight drug education curricula from school districts through the country. This material was made available through the U. S. Government Printing Office (National Clearinghouse for Drug Abuse Information, n.d.).

Other programs have indicated the Federal government's role in drug education. Some were the marihuana research program, the authorization for use of psychotometric

drugs for controlled research, the sponsoring of training programs on drug abuse at selected universities, and the support of numerous investigations into all realms of the non-medical use of dangerous drugs (Richards, 1969).

In summary, the Federal government through its various programs, agencies and operations appeared very interested and very involved in the contemporary drug situation. Certainly, with the establishing and financing of all these endeavors, it could be assumed that the national government was convinced of the need for educational efforts in the area of drug abuse.

Other agencies and individuals echoed this emphasis of the Federal government. The editors of Today's Education, in an issue highlighting the drug scene, stated that, "Drug abuse is a serious, growing problem here and teachers are increasingly being called upon to do something (National Education Association, 1969, p. 36). This article also expressed concern from another national organization, the Joint Committee on Health Problems in Education of the National Association and the American Medical Association. A resolution adopted by that group concluded ". . . that the dangers of misusing and the advantages of correctly using drugs should be taught to all children . . . (p. 39)."

Bland (1969) wrote of the various pressures being placed upon the schools to become more involved in drug

education. She emphasized that the increased involvement of youth with illegal drugs, the concern of parents and community leaders and the necessity for valid, factual information have all brought attention to the responsibility of the school in providing drug education.

In a survey of state departments of education's health curricula (Smith, Mikeal and Taylor, 1969), it was documented that all states allow for health education courses, with 38 states requiring such courses. Drug abuse problems ranked first in total mentions concerning significant health problems within the health curriculum guides. It was also found that there was a wide variation in the content and at the grade levels in which drug abuse material was suggested for presentation.

Barrins (1969) considered the contemporary drug situation to be ". . . the newest and most dangerous challenge to school boards (p. 15)." She pointed out some of the changes that have recently occurred in the use of narcotics and dangerous drugs by the school-age population. Drug utilization has spread from lower socioeconomic areas to middle and upper class neighborhoods. Further, it has gone from being a high school problem to involvement in junior high schools and even into elementary schools. While emphasizing the need for schools to become involved in controlling drug abuse, Barrins emphasized the necessity for

first determining the extent of drug misuse among school children in this country.

Louria (1968) was also alarmed that the recent increase in the non-medical use of dangerous drugs has extended to high schools, junior high school and elementary schools. He further pointed out that there were few studies to assess the prevalence of drug use within a given group or to distinguish between the experimenter and the chronic or consistent user. He declared that it was necessary to analyze not only absolute incidence figures, but also the frequency with which the involved drugs are used.

Related Epidemiology Studies

The past decade had witnessed a significant increase in literature related to the drug use habits of America's youth. Comprehensive bibliographies and listings in this area had been published, especially by involved government agencies (American Association of School Administration, 1971). A very large part of this information was concerned with the drug involvement of college students. Because of the nature of this study, the review of literature on drug involvement concentrated on information showing the drug epidemiology among school age children and youth. Although none of the reviewed studies specifically mentioned or differentiated findings for educable retarded students, it was assumed that some educable retarded students were

sampled during the investigations. This was especially true in those investigations that included total grade or school populations.

Marihuana. Survey statistics of marihuana smoking indicated rising rates of usage among young people in our schools. Ungerleider and Bowen (1969) reported that at one large high school only one student estimated that less than seventy percent of the school's student population had used marihuana. Beattie (1969), in reporting drug arrests in California, pointed out that the majority of juvenile arrests related to drugs involved marihuana violations. In 1968 figures showed that 5,698 or 58 percent of drug related arrests in California were identified with marihuana.

In another reference to arrest figures Langan (1968) cited figures from the Los Angeles Police Department showing significant increases in juvenile arrests for drug offenses. He additionally pointed out that approximately seventy-five percent of these arrests were for involvement with marihuana.

Fort (1969) reported his survey of 19,000 high school students in San Mateo County, California in 1968. At that time he found that thirty-two percent of the students had tried marihuana and that more than one half of that group has used it ten or more times. In a follow-up investigation of the same high schools in 1969, forty

percent of the students reported using marihuana to some extent (Berg, 1970).

Carney (1970) discussed a comprehensive, anonymous questionnaire survey of attitudes, habits and other related factors toward drug usage in a large California school district. Final figures showed that in the eighth grade twenty percent of the boys and nineteen percent of the girls admitted to having used marihuana on a scale ranging from one use or experimentation to regular, at least once a week usage. In the eleventh grade these figures increased to fifty percent for the boys and forty-one percent for the girls.

In a large scale study involving the Sacramento California schools, Delavan (1968) found that three tenths of one percent of sixth grade pupils reported some experience with marihuana. At the eighth grade level five percent of the pupils reported frequent usage, with an additional five percent reported as using it once or twice. For tenth grade students the figures for frequent use increased to ten percent and to 8.4 percent for once or twice usage. Among twelfth graders, corresponding figures showed that fifteen percent frequently used marihuana and an additional 9.1 percent had used it once or twice. A summary of this study showed that less than one percent of sixth graders, ten percent of eighth graders, eighteen percent of tenth graders and twenty-four percent of the senior class admitted having

used marihuana one or more times. At all grade levels, reported incidence was higher for boys than for girls.

A comprehensive 305 item questionnaire was utilized by the Montgomery County, Maryland Public Schools (Joint Advisory Committee on Drug Abuse, 1970), in an attempt to obtain accurate information of drug use among students. The questionnaire obtained student's (a) use of drugs, (b) knowledge, opinions, and attitudes towards drugs, and (c) perception of the extent of the problem. Responses from 2,777 secondary school students showed that approximately 11.5 percent of high school students were current users of marihuana. Another 7.3 percent admitted to having tried it at some time. Comparatively, junior high school students reported 2.2 percent current use of marihuana with another 2.7 percent as having tried it but quit.

Richard Blum (1969b) mentioned several investigations he conducted with youthful marihuana users. A 1967 study in a San Mateo, California high school found that 18 percent of the student body had used marihuana, with 11 percent having used it more than three times. In this investigation Blum identified a direct correlation between grade level and percent of students using drugs. In a comparative study of two high schools he found that 31 percent of the boys and 28 percent of the girls in a middle class school smoked marihuana. Comparatively, results showed that 13 percent of the boys and 7 percent of

the girls in a lower middle and working class school smoked marihuana.

Herzog, Sudia and Harwood (1970) conducted a survey for the Children's Bureau to gather information concerning drug use among teenagers. The survey was not an attempt to gather valid statistical data, but rather to obtain opinions, and the numerical information is considered as approximations. Replies from 205 respondents showed that only ten claimed not to know any drug users. Only two of the students stated that there were no drugs in their schools. Almost one half of those who responded felt that the use of marihuana was acceptable, although not necessarily wishing to use it themselves.

An article inserted in the Congressional Record (October 5, 1971) highlighted a series of newspaper articles concerning the school drug situations in the communities of Salem and Peabody, Massachusetts. A three page anonymous questionnaire was used to obtain information from 1184 high school and junior high school students in the two towns. An analysis of the responses showed that among junior high schoolers 21 percent of the Salem students and 15 percent of the Peabody students admitted to some drug usage. At the high school level the figures increased to 40 percent in Salem and 37 percent in Peabody. It was further found that all types of illegal drugs were readily available within the schools. As far as reasons for drug

use, curiosity was the most important reason for a first time trial, with encouragement by peers ranking a close second. Once a student has tried drugs no single reason emerged to explain continued use. Some of the explanations identified by this poll included personal hangups, enjoyment, family problems and disgust with society.

According to data obtained from several school populations in New York, smoking marihuana has increased significantly in recent years (Straight Talk About the Drug Problem, 1968). A survey of 2,587 high school students in Great Neck revealed that 8 percent had smoked marihuana. It was further found that most of the users intended to continue using it, even though aware of the legal ramifications. In Ardsley, a survey return of 525 of 720 possible replies found that 20 percent of the students admitted to using marihuana at least once. A similar survey of junior and senior high school students in Mamaroneck showed 13 percent of the junior high sample and 20 percent of the high school sample as drug users. Analysis of these findings found 2 percent of the junior high students were regular users and 11 percent experimenters. At the high school level 5 percent were regular users and 15 percent casual users.

The use of marihuana had spread to regions and areas generally considered rural in nature. A complete and comprehensive survey of high school students in Utah was

undertaken in 1969 (Utah Governor's Citizen Advisory Committee, 1969b). The information obtained showed that 12.2 percent of the students polled had utilized marihuana to some degree. A concurrent but separate investigation found considerable marihuana use among high school drop-outs in Utah (Utah Governor's Citizen Advisory Committee, 1969a). Among this group approximately 50 percent said that they had used marihuana.

Amphetamines and barbiturates. Comparatively little was known about the extent of amphetamine and barbiturate abuse among schoolage children. Several articles had been written describing the situation but they often lacked references and/or statistical data (Smith and Meyers, 1968; Auster, 1969; Barter and Werme, n.d.). Other references discussed the effects these drugs had on young people and their lives (Freedman and Wilson, 1964).

In a selected review of literature pertaining to the social psychological factors associated with drug abuse among youths, Barter and Werme (n.d.) pointed out the paucity of epidemiological research. Even with the lack of hard core evidence they concluded that:

Our study of the literature and clinical experience would lead us to believe that barbiturates, amphetamines and tranquilizers are used by children and adolescents at all levels of our society. Indeed, they may well represent the favorite drugs of the upper social class (p. 19).

Some efforts at ascertaining the extent of stimulants and sedatives used by school children had been made. In the Sacramento School District study (Delavan, 1968) children were asked to indicate their usage of "other drugs or narcotics" which included amphetamines, barbiturates LSD and other substances except marihuana. Results showed that two percent of the sixth grade pupils reported using drugs or narcotics to some extent. At the eighth grade level 2.5 percent reported using these substances occasionally or frequently, with another 3.6 percent reporting usage once or twice. The tenth grade sample results showed that approximately 10 percent had some contact with other drugs and narcotics, with 4.8 percent using them frequently. Twelfth grade students in this study reported usage among 11.4 percent of the sample, including 6.8 percent at occasional or frequent use.

Carney (1970) found the incidence of amphetamine use for eighth graders to be 14 percent for males and 15 percent for girls. Barbiturates were also used more by girls at this level, with data showing that 14 percent of the boys and 19 percent of the girls had some involvement. With the eleventh grade group usage increased by males to 37 percent for amphetamines and 29 percent for barbiturates. Correspondingly the figures for the girls were 40 percent and 38 percent.

Fort (1969) discussed a survey of the pupils in seventh, tenth, and twelfth grades of the Berkley, California schools. In the area of amphetamine abuse, five percent of the seventh graders, twelve percent of the tenth graders and fifteen percent of the twelfth graders were reported as experimenting with these drugs. Barbiturate abuse followed a similar pattern, except girls in the twelfth grade reported a greater use than boys. The findings were similar to those of the San Mateo study (Fort, 1969) where it was found that approximately one of every six secondary students had used stimulants.

Similar figures were found in another California school district (Smith, 1967). In a newsletter to parents reporting a questionnaire survey of eleventh and twelfth grade pupils in two district high schools, findings showed that 22 percent of the boys and 18 percent of the girls had taken amphetamines. Analysis of these findings revealed that about 75 percent of both groups had used the drugs three times or more.

Miller (1968) reported the sampling taken in the Great Neck, New York schools where 6 percent of the students were found to have taken barbiturates. It was also found that most users intended to continue use of drugs. An interesting facet of this study was the identification of settings for drug use, with the home, parks and recreational facilities, and parties reported most often in that order.

The data from the Montgomery County Public Schools survey (Joint Advisory Committee on Drug Abuse, 1970) showed that at the senior high level 7.8 percent of the students sampled had used amphetamines to some degree. At the junior high level the figures dropped considerably with 1.0 percent of the sample identified as users. Comparable figures for barbiturates used showed 7.2 percent of the high school sample and 1.1 percent of the junior high school sample as admitted users at one time or another.

The two Utah studies (Utah Governor's Citizen Advisory Committee, 1969a and 1969b) also exemplified the increased use of stimulants and sedatives among adolescents and young adults. Among the high school population of the state 10 percent of the students were found to have used amphetamines. Among the high school dropout group 29 percent said they had used amphetamines and 31.2 percent reported use of barbiturates.

LSD. Reliable data on the prevalence of the use of LSD and other such substances were very scarce (Barter & Werme, n.d.). Louria (1967), in undocumented statements, noted that LSD use had been estimated at 1 to 3 percent among young persons, including those in high school, junior high schools, and even elementary schools. However, he also pointed out that hospital admissions of LSD related problems had been declining, perhaps indicating an actual decrease in usage.

Various figures have been obtained for the use of LSD by high school students. A survey involving all the public high schools in Utah (Utah Governor's Citizen Advisory Committee, 1969b) found that 4.9 percent of the students responded that they had used LSD on some occasion. Significantly higher figures were found in a survey conducted by the Castro Valley, California Unified School District (Smith, 1967). Data from this investigation showed that 15 percent of the boys and 9 percent of the girls had taken LSD. It was further found that more than one half of these students had used the drug three or more times.

Survey results have also varied within the same school system from year to year. In a 1968 investigation of the San Mateo County, California high schools, Fort (1969) found that approximately 10 percent of the students had used LSD. Berg (1970) presented data from a 1969 survey of the same schools conducted under the direction of the San Mateo County Narcotic Advisory Committee. Findings at that time showed that 15.1 percent of the high school students claimed some involvement with LSD type drugs. It was further shown that high school boys tended to use LSD more than high school girls.

Among senior high students in Montgomery County, Maryland (Joint Advisory Committee on Drug Abuse, 1970) the proportion of continuing users of LSD was greater than

those who tried and quit. Examination of the statistics showed that 3.6 percent were using LSD on some occasion, with an additional 2.2 percent who had tried the drug but stopped using it. An opposite pattern was identified at the junior high level where 0.4 percent of the respondents claimed continued use, with 0.7 percent having tried LSD and then quit.

Several other investigations indicated that LSD is being used by high school students, although perhaps not to the extent implied by reports in the mass news media. In Sacramento, California (Delavan, 1968) students responded to questionnaires that asked, in part, their involvement with drugs or narcotics other than marihuana. Findings showed that virtually none of the sixth grade pupils reported using other drugs frequently with 2 percent reporting some experimentation. The level of use reported increased at each the eighth, tenth, and twelfth grade levels, reaching a high of 11.4 percent. It must be clarified that these figures represented all drugs except marihuana, not just the use of LSD.

Miller (1967) reported that two percent of a high school population in a suburban New York community had tried LSD at least once. The majority of these users felt they would continue to use it. Higher figures were reported in Berkeley, California (Fort, 1969). Here it was found that about ten percent of the tenth graders experimented

with LSD type drugs, with seven percent doing so on a continual basis. By the twelfth grade, 13 percent had some experience with hallucinogens and six percent reported ongoing use. Carney (1970) found little difference between usage of LSD by male and female pupils. For the eighth grade sample 14 percent of the boys and 15 percent of the girls were recorded as having been involved with LSD at least once. Findings for the eleventh grade increased to 21 percent of the boys and 20 percent of the girls.

Narcotics. Very little data on the use of "hard drugs" by secondary school students were available. Generally the available information indicated that narcotics are used by very few students (Berg, 1970). An exception to this generalization are the findings in the Coronado, California Unified School District (Carney, 1970) which showed that 12 percent of the boys and 6 percent of the eighth graders sampled had tried opiates. These figures, however, may be seriously questioned when compared with the eleventh grade statistics. At this level 7 percent of the boys and 10 percent of the girls reported using opiates at least once. Perhaps the contrary eighth grade results were influenced by some outside and/or misleading factor. Nevertheless, the figures were unique among student replies concerning use of narcotic drugs.

The most concentrated use of narcotics appeared to occur most often among those living in the inner cities

(Berg, 1970) and usually in the sections associated with poor incomes and housing (Barter & Werme, n.d.).

Investigations by Chein (1966) in New York City and Firestone (1966) in Chicago documented the use of narcotics by juveniles living in the deprived, run-down sections of these cities. In a large metropolitan school district Fort (1969) found that approximately three percent of the students polled in the seventh, eighth, and tenth grades had tried heroin. In the twelfth grade five percent of the boys and eight percent of the girls had done so.

Very low statistical figures for heroin usage were found in suburban Montgomery County, Maryland (Joint Advisory Committee on Drug Abuse, 1970). Among junior high and senior high students, 0.4 percent reported involvement with heroin on some continuing basis. An additional 0.8 percent were found to have tried the drug but stopped using it. Figures at the junior high level were much lower with no students admitting regular usage.

Overall, it appeared that the use of narcotics by school-age children was very low, especially when compared to the figures for other drugs of concern. A summary by the Medical Society of the County of New York (1966) covering the incidence of hard core drug abuse in New York City pointed out that heroin was not considered a serious problem, in extent, in any of the schools. However, the severity of addiction to these drugs, the physical deterioration

involved and the associated high crime rate among users, all testified to the significance of the problem.

Other substances. Investigators of solvent sniffing among children and adolescents, identified a wide variety of involved substances: lighter fluid, cleaning fluid, model cement, plastic cement, paint thinner, fingernail polish remover, and gasoline (Pierson, 1964; Press & Done, 1967a, 1967b). They pointed out that usage seemed to be more common to boys than to girls. However, this may simply have been the result of boys being caught or identified more frequently. Usage tended to be found most often among younger children, with the average age of individuals involved at fourteen. The range extended, however, from age seven to adulthood. Jessor, Graves, Hanson, and Jessor (1968) mentioned that limited studies have shown that more Spanish-Americans and fewer Negroes are reported as sniffers when compared to their total proportion in the population.

Reliable information concerning the extent of use of other substances was very scarce. Barter and Werme (n.d.) discussed drug abuse among children and adolescents and concluded that there was almost no data concerning the solvent sniffing problem. Berg (1970) pointed out that survey statistics on patterns of use of special substances was not available.

One attempt to obtain factual data on solvent use was included in the Montgomery County, Maryland survey (Joint Advisory Committee on Drug Abuse, 1970). A question asking students to report their use of glue found 6.5 percent of the junior high students with some experience. On the senior high level 7.4 percent of the sample admitted using solvents, with 1.0 percent reporting regular and continuous usage.

Carney (1970) investigated the teenager drug abuse situation in a large California school district. Utilizing an anonymous questionnaire he found that among eighth graders, 16 percent of the boys and 17 percent of the girls were found to have used inhalents. At the eleventh grade level, the figures increased to 23 percent for boys and 20 percent for the girls. The figures represent total users, ranging from one to regular, frequent usage.

Press and Done (1967a) discussed the arrest figures involving glue sniffing in three metropolitan cities. In Chicago 389 adolescents were arrested during 1965. For the same year in Los Angeles 594 arrests were reported. New York City figures for 1965, which only include those with no previous arrest record, showed that 1,275 juveniles were referred to the youth division for involvement with glue or some related substance.

Figures for New York City in 1963 reported over 2,000 cases of solvent sniffing (Winiah & Goldstein, 1965).

Summary

The past decade had witnessed growing concern over the improper use of drugs by children and youth in our society. Certain young people have experimented and used virtually all substances known, or even thought to have an effect upon mood and perception. Interest has occurred in the stimulants including cocaine and amphetamines, in the opiates, in all types of depressants, and in both mild and strong hallucinogens. Even common and readily available products have been misused as agents to produce some desired effects. Among the seemingly innocent substances that have been tried are included glue, gasoline, lighter fluid, cough medications, banana skins, nutmeg, and spray can propellants.

There were several studies that measured the non-medical use of drugs in junior high and senior high school populations. Incidence figures varied widely, reflecting differences in geographic locations, socioeconomic levels, study designs, and sample selections; no national estimates of drug use were available. Although no reference of drug abuse by retarded students was found, there was no evidence found to assume that they were not involved with drugs.

CHAPTER III

Methods and Procedures

Many factors were considered in determining the procedures to obtain the data for this study. A primary concern revolved around the use of an identifiable or an anonymous questionnaire. Both approaches provided certain advantages. Data collected through the use of an identifiable questionnaire permitted the possibility for follow-up material at a later time. It also allowed the opportunity to obtain additional information about the student respondents. The use of an anonymous questionnaire, on the other hand, provided the circumstance to minimize apprehension and to provide more truthful responses. Because of the nature of the subject matter and the many perceived concerns of the respondents, it was decided to develop and utilize an anonymous questionnaire.

Development of the Preliminary Questionnaire

In determining the content for the preliminary questionnaire many sources were involved. Primary sources consisted of individual interviews and comments with persons concerned about the topic, the Dissertation Advisory

Committee for this study, a seminar of doctoral students in a dissertation research class, and the review of literature on related topic areas. This review included books, periodicals, community, state and Federal publications, dissertations, and other appropriate sources. Of particular significance were research reports and reviews of drug epidemiological surveys undertaken with other populations. Factors from all sources were used in the development of the preliminary questionnaire.

The preliminary draft of the "Student Information Form" included general information explaining reasons for the survey, specific directions to be followed for completion of the form, and sections for student response to usage of drugs (Appendix B). Drug classification sections included marihuana, amphetamines, barbiturates, LSD, narcotics and other substances. Efforts were made to minimize errors resulting from the limited reading ability of some respondents. All narrative content, wherever possible, was kept at a reading level consistent with that generally attained by older educable retarded students. A further provision required that all content be read to the students by the cooperative class teachers.

Concurrent with the development of the preliminary questionnaire, directions for teacher administration were also formulated (Appendix C). The directions covered all procedures for administration of the questionnaire,

including aspects of preparation, distribution, completion and collection. The directions were specifically designed to emphasize and assure the participating students of the confidentiality of their replies.

These initial items, the preliminary student information form and the related directions, along with a copy of the dissertation proposal, were submitted to the members of the Dissertation Advisory Committee for their review and comments. Suggestions for revision of the questionnaire and the administration directions were made by the Committee members and incorporated in the revised materials.

Development of the Final Questionnaire

Utilizing the suggestions of the Dissertation Advisory Committee and of members of the seminar class in dissertation research, the final questionnaire was developed. Assistance was received from Dr. James M. Williams, Assistant Professor, Department of Educational Psychology, University of Alabama, in designing the format of the final form. Dr. Williams also served as consultant in providing the computer program and in the statistical evaluation of the data collected. This final instrument, along with cover letters necessary to conduct the study, were submitted to the Dissertation Advisory Committee for concurrence.

The final form of the "Student Information Form" was similar to the preliminary version, with one major change (Appendix D). The areas of amphetamines and barbiturates were combined under one heading rather than two. This approach was followed as it was felt that some adolescents, especially the retarded, were involved with pills without really being aware of their composition or effects. The drug areas of concern on the final version included marihuana, amphetamines and barbiturates, LSD, narcotics, and other substances. Included under each drug area were opportunities for the respondents to designate the extent of their usage in the following manner:

- (a) I have never tried it.
- (b) I have tried it about 1 to 5 times.
- (c) I have tried it about 6 to 10 times.
- (d) I have tried it about 10 or more times.
- (e) I have stopped using it.

There were also two statements concerning the respondents knowledge of drug use by their peers and friends. These replies were provided for three purposes: (a) to familiarize the students with the procedures to be followed; (b) to attempt to decrease anxiety toward participation; and (c) to obtain some estimate of the number of students who have friends who are involved with drugs.

The common or slang terminology used to identify the various drugs were felt to be prevalent at the time of the study. It was recognized, however, that slang terms, in addition to changing rapidly, vary from area to area even within one state. Some contemporary terms that were unique to a particular location were possibly overlooked. An attempt was made to overcome this problem by presenting a sufficient number of generally understood terms.

The final student information form consisted of two pages, including all narrative and response sections. No changes were made in the preliminary draft of the directions for administration of the questionnaires, and it was used, in total, in the study. These directions also consisted of two pages and included all necessary procedures. A class identification form was developed for completion by the teachers administering the questionnaires. This form was necessary to obtain necessary enrollment and demographic data (Appendix E).

Selection of Population for the Study

A decision was made that the population for this study would be educable mentally retarded students enrolled in senior high level cooperative classes. This decision was based on the fact that drug use among the school age population presents the most significant problem at the secondary level. By including classes

at this level age of the students was controlled to some extent. Cooperative class eligibility required, among other criteria, that participating students be at least fourteen years of age. Therefore, the chronological age range of the students involved was between fourteen and approximately eighteen.

It was additionally decided to include in the study only cooperative classes which had been in operation for at least one year. This was necessary as some of the students placed in recently opened classes had not yet been fully evaluated and determined eligible for cooperative class placement. The procedure in meeting the criteria was to select cooperative classes from those that operated during the 1970-1971 school year and that were still operative during the 1971-1972 school year. There were seventy four cooperative classes meeting the criteria (Table 3).

TABLE 3

Total Senior High Educable Mentally Retarded
Cooperative Classes 1970-1971

	Type of System		Total
	City	County	
Systems with Cooperative Classes	16	16	32
Cooperative Classes	26	48	74

Selection of Sample for Study

Superintendents of the school systems containing the population classes were contacted for permission to conduct the study. A cover letter explaining the purpose and procedures of the study (Appendix F), a copy of the final questionnaire, and a reply card (Appendix G) were sent to each of the thirty-two superintendents.

Replies were received from twenty-three of the thirty-two systems. Twenty-two of these twenty-three systems, 95.6 percent, agreed to participate in the study. This represented sixty three of the seventy four cooperative classes, and resulted in 85.1 percent of the population classes being eligible for participation in the sample selection.

Based on the population characteristics of the school systems they represented, the sixty three classes were assigned to one of three groups: (a) metropolitan, (b) urban, or (c) rural. Table 4 presents the number of eligible cooperative classes for each group.

On the advice of the Dissertation Advisory Committee, a total of fifteen classes were selected for participation. To accomplish this each of the eligible classes of the population group was assigned a number. Then, utilizing a table of random numbers, five classes from each group were selected resulting in the following distribution:

TABLE 4

Eligible Cooperative Classes by Population Classification

Classification	Total Classes	Eligible Classes	Percent
Metropolitan	30	30	100 %
Urban	16	11	68.7%
Rural	28	22	75.5%
Total	74	63	85.1%

(a) a metropolitan group of five classes

(b) an urban group of five classes

(c) a rural group of five classes.

It was not necessary to select alternate classes as the sample classes were already determined willing to participate in the study.

The final selection of fifteen classes represented 23.8 percent of the cooperative classes eligible to participate in the study. In the metropolitan classification five of thirty classes, 16.6 percent, were included. For the urban group, five of the eleven classes eligible, or 45.4 percent, were selected. The five classes of the rural group represented 22.7 percent of the twenty-two eligible classes.

Method of Collecting the Data

Following selection of the sample classes, a complete package of materials for the study was mailed directly to the teachers of these classes. Each packet contained a cover letter explaining the study and requesting cooperation (Appendix H), sufficient copies of the student information form to include all class members, a copy of the necessary directions for administration of the forms, the class identification sheet, and a stamped, return-addressed envelope.

Three classes did not return the materials by the date requested in the cover letter. A follow-up letter was sent to teachers of these classes explaining the necessity for having all materials returned and requesting cooperation. (Appendix I). This resulted in a return of the questionnaires from the three classes.

Statistical Procedures

The data collected from the student questionnaires were tabulated by use of computer programming. This procedure provided for analysis of information according to population classification, sex, and age of the respondents. Actual compilation and analysis of data was accomplished by use of the NuCros program written by Dr. Harry R. Barker, Jr., of the University of Alabama.

CHAPTER IV

Analysis of Data

The following procedures were employed in compiling and analyzing the data collected for this investigation.

The Questionnaire

One hundred and ninety-eight questionnaires were returned by the fifteen sample classes. Upon receipt these forms were first checked for completion and accuracy of following directions. Fifteen of these forms were found to be incomplete or incorrectly marked and were discounted. An additional three forms were eliminated because the respondents were under age.

The one hundred and eighty acceptable questionnaires were then placed in the appropriate population classification group for tabulation. These procedures assured that each form was fully completed and that an accurate method of determining specific group responses could be undertaken. In the final tabulation there were sixty-two metropolitan responses, fifty-four urban responses and sixty-four rural responses.

Characteristics of the Sample

The teachers of the sample classes were asked to provide data concerning their classes. Analysis of this information showed that a total of sixty-two pupils, thirty-nine males, and twenty-three females, were in the metropolitan category. This included ten in the 14-15 year old age group, forty-two in the 16-17 year old age group, and ten in the 18+ year old age group. The group had a chronological age range of 15-0 to 18-11 and a mental age range of 7-4 to 14-0. The range of intelligence quotients was from 43 to 80.

There were fifty-four questionnaires analyzed in the urban category, representing thirty-seven males and seventeen females. These figures included twenty-four in the 14-15 year old group, twenty-five in the 16-17 year old group, and five in the 18+ year old group. The group showed a chronological age range of 14-8 to 20-0, a mental age range of 7-9 to 15-5, and an intelligence quotient range of 52 to 84.

In the rural category there were sixty-four questionnaires utilized, including thirty-eight males and twenty-six females. This included twenty-two, twenty-seven, and fifteen pupils respectively in each of the three age groups. The urban sample had a chronological age range of 14-0 to 19-0 and a mental age range of 7-6 to 14.9. Intelligence quotients scores ranged from 40 to 84.

Methods in Analyzing Data

The "Student Information Form" was specifically designed and constructed for data processing and analysis by an electronic computer. Following verification and assignment of the questionnaires to appropriate groups, the following procedures were used:

1. Each questionnaire was assigned numerical code numbers indicating population classification, age group, and sex.
2. All responses were identified according to a numerical code.
3. The data were compiled on a Fortran Coding Form.
4. The data from the Fortran Coding Form were then key punched on computer cards for each respondent.
5. The accuracy of each punched card was verified before being used in programming.
6. Actual computation of the analysis of data was accomplished by use of the Nucros Program written by Dr. Harry R. Barker, Jr., Department of Educational Psychology, University of Alabama.

Findings of the Study

The findings presented in this chapter were derived from an analytical treatment of the responses of senior high

retarded cooperative class students in Alabama. For two specific reasons it was decided to tabulate and present the findings for each population group separately:

(a) there was no attempt to make comparisons between the population groups; and (b) there was a wide range in the number of respondents representing the three population classifications.

The complete findings of this survey are presented in tables developed to report pupils' responses. The descriptive comments, discussion and summarizations accompanying them represent an analysis of the available data.

Drug Use by Peers

The "Student Information Form" requested the respondents to indicate whether or not they knew of drug use by their friends and classmates. The responses received concerning these survey items are presented in Tables 5 and 6. In summary, these data show the following:

Marihuana.

1. Almost 60 percent of the metropolitan students, 28 percent of the urban students, and 24 percent of the rural students reported friends who used marihuana.
2. Metropolitan students reported about 37 percent usage of marihuana among classmates, with urban and rural usage

TABLE 5

Student Reporting of Friends' Use of Marihuana, Amphetamines/Barbiturates, LSD, Narcotics, and Other Substances

Population Classification	Response	Marihuana No. %	Amp./Bar. No. %	LSD No. %	Narcotics No. %	Oth. Sub. No. %
Metropolitan	YES	37 59.7	32 51.6	22 35.5	21 33.9	32 51.6
	NO	25 40.3	30 48.4	40 64.5	41 66.1	30 48.4
Urban	YES	15 27.8	12 22.2	7 13.0	7 13.0	13 24.1
	NO	39 72.2	42 77.8	47 87.0	47 87.0	41 75.9
Rural	YES	15 23.4	10 15.6	9 14.1	5 7.8	10 15.6
	NO	49 76.6	54 84.4	55 85.9	59 92.2	54 84.4

TABLE 6

Student Reporting of Classmates' Use of Marihuana, Amphetamines/Barbiturates, LSD, Narcotics and Other Substances

Population Classification	Response	Marihuana No. %	Amp./Bar. No. %	LSD No. %	Narcotics No. %	Oth. Sub. No. %
Metropolitan	YES	23 37.1	16 25.8	9 14.5	12 19.4	24 38.7
	NO	39 62.9	46 74.2	53 85.5	50 80.6	38 61.3
Urban	YES	2 3.7	1 1.9	1 1.9	0 0.0	7 13.0
	NO	52 96.3	53 98.1	53 98.1	54 100.0	47 87.0
Rural	YES	5 7.8	4 6.3	4 6.3	0 0.0	3 4.7
	NO	59 92.2	60 93.8	60 93.8	64 100.0	61 95.3

far behind at approximately 4 percent and 8 percent respectively.

Amphetamines/Barbiturates.

1. Approximately 50 percent of the metropolitan sample, 22 percent of the urban sample, and 16 percent of the rural sample indicated that they had friends who used amphetamines and/or barbiturates.
2. Reported usage among classmates was much lower, with about 25 percent of the metropolitan sample, 2 percent of the urban sample, and 6 percent of the rural group reporting classmate usage.

LSD.

1. Approximately 35 percent of the metropolitan students, 13 percent of the urban students, and 14 percent of the rural students reported friends who used LSD.
2. Classmate usage was reported at about 14 percent for the metropolitan group, 2 percent for the urban group, and 6 percent for the rural group.

Narcotics.

1. Friends usage of narcotics was reported at about 33 percent for the metropolitan pupils, 13 percent for the urban students, and

eight percent for the rural students.

2. About 20 percent of the metropolitan sample reported they knew of classmates usage of narcotics, with no usage reported for the urban and rural samples.

Other Substances.

1. More than one half of the metropolitan students, 24 percent of the urban students, and 15 percent of the rural students identified friends usage of other substances.
2. Reported classmate usage was presented at about 39 percent, 13 percent, and 5 percent for the three groups respectively.

Drug Use Among Metropolitan Students

Pupils were asked to indicate the degree to which they used the agents under consideration. Responses to these questions were tabulated and analyzed according to total group, sex, and age factors. These data, including number of responses and percentages, are presented in Tables 7-10. These data are summarized as follows:

Marihuana. Over 17 percent of the metropolitan sample admitted using marihuana, with 11 percent continuing to use it. Usage was found to be significantly higher among males and to attain the highest

TABLE 7

Responses Concerning Personal Use of Marihuana, Amphetamines/Barbiturates, LSD, Narcotics, and Other Substances by Metropolitan Students

Category	Response	Total Using No. %	1-5 Times No. %	6-10 Times No. %	11+ Times No. %	Still Using No. %
Marihuana	YES	11 17.7	6 9.7	1 1.6	4 6.5	7 11.2
	NO	51 82.3	56 90.3	61 98.4	58 93.5	55 88.8
Amphetamines/ Barbiturates	YES	8 12.9	4 6.5	1 1.6	3 4.8	5 8.0
	NO	54 87.1	58 93.5	61 98.4	59 95.2	57 92.0
LSD	YES	4 6.5	1 1.6	1 1.6	2 3.2	2 3.2
	NO	58 93.5	61 98.4	61 98.4	60 96.8	60 96.8
Narcotics	YES	5 8.1	2 3.2	0 0.0	3 4.8	3 4.8
	NO	57 91.9	60 96.8	62 100.0	59 95.2	59 95.2
Other Substances	YES	16 25.8	11 17.7	1 1.6	4 6.5	7 11.2
	NO	46 74.2	51 82.3	61 98.4	58 93.5	55 88.8

TABLE 8

Responses Concerning Personal Use of Marihuana, Amphetamines/Barbiturates,
LSD, Narcotics, and Other Substances by Metropolitan
Students According to Sex

Category	Sex	Total Using No. %	1-5 Times No. %	6-10 Times No. %	11+ Times No. %	Still Using No. %
Marihuana	Male	10 25.7	6 15.4	1 2.6	3 7.7	6 15.4
	Female	1 4.3	0 0.0	0 0.0	1 4.3	1 4.3
Amphetamines/ Barbiturates	Male	6 15.4	3 7.7	0 0.0	3 7.7	4 10.2
	Female	2 8.6	1 4.3	1 4.3	0 0.0	1 4.3
LSD	Male	3 7.7	1 2.6	0 0.0	2 5.1	2 5.1
	Female	1 4.3	0 0.0	1 4.3	0 0.0	0 0.0
Narcotics	Male	3 7.7	1 2.6	0 0.0	2 5.1	1 2.6
	Female	2 8.6	1 4.3	0 0.0	1 4.3	2 8.6
Other Substances	Male	13 33.4	9 23.1	0 0.0	4 10.3	6 15.4
	Female	3 13.0	2 8.7	1 4.3	0 0.0	1 4.3

TABLE 9

Responses Concerning Personal Use of Marihuana, Amphetamines/Barbiturates, LSD, Narcotics, and Other Substances by Metropolitan Students According to Age

Category	Age Groups	Total Using No. %	1-5 Times No. %	6-10 Times No. %	11+Times No. %	Still Using No. %
Marihuana	14-15	1 10.0	0 0.0	0 0.0	1 10.0	1 10.0
	16-17	8 19.1	5 11.9	1 2.4	2 4.8	5 11.9
	18+	2 20.0	1 10.0	0 0.0	1 10.0	1 10.0
Amphetamines/ Barbiturates	14-15	2 20.0	0 0.0	1 10.0	1 10.0	2 20.0
	16-17	5 11.9	3 7.1	0 0.0	2 4.8	3 7.1
	18+	1 10.0	1 10.0	0 0.0	0 0.0	0 0.0
LSD	14-15	1 10.0	0 0.0	0 0.0	1 10.0	1 10.0
	16-17	2 4.8	1 2.4	0 0.0	1 2.4	1 2.4
	18+	1 10.0	0 0.0	1 10.0	0 0.0	0 0.0
Narcotics	14-15	1 10.0	0 0.0	0 0.0	1 10.0	1 10.0
	16-17	3 7.2	2 4.8	0 0.0	1 2.4	1 2.4
	18+	1 10.0	0 0.0	0 0.0	1 10.0	1 10.0
Other Substances	14-15	2 20.0	1 10.0	0 0.0	1 10.0	2 20.0
	16-17	11 26.1	8 19.0	0 0.0	3 7.1	5 11.9
	18+	3 30.0	2 20.0	1 10.0	0 0.0	0 0.0

TABLE 10
 Analysis of Responses by Metropolitan Students Who Have Used Marihuana,
 Amphetamines/Barbiturates, LSD, Narcotics and Other Substances

Variables	Marihuana No. X ²	Amph./Barb. No. X ²	LSD No. X ²	Narcotics No. X ²	Oth. Sub. No. X ²
Sex					
Male	10 4.495*	6 0.576	3 0.268	3 0.020	13 3.11
Female	1	2	1	2	3
Age					
14-15	1 0.495	2 0.560	1 0.616	1 0.149	2 0.271
16-17	8	5	2	3	11
18+	2	1	1	1	3

*P < .05

percentages in the 16-17 and the 18+ year old age groups.

Amphetamines/Barbiturates. Almost 13 percent of the pupils indicated that they had used amphetamines and/or barbiturates to some extent, with 8 percent reporting to still be using the products. The level of usage was considerably higher among males than females. Concerning age, the 14-15 year old group had the highest percentage of use.

LSD. Slightly more than 6 percent of the students reported some usage of LSD, with two students admitting 11 or more contacts with the agent. Again total and ongoing usage were higher among males than females.

Narcotics. Approximately 8 percent of the metropolitan sample admitted using narcotics with the highest percentage of use occurring 11 or more times. Better than one half the users were continuing to use the drugs. Usage was about evenly distributed according to sex and among the three age groups.

Other substances. Over 25 percent of the responding students were found to have some involvement with other substances. Almost one half of this group (11.2 percent) stated that they still used these substances. Again, a larger percentage of the boys than the girls indicated use. Level of usage was also found to be highest among the 18+ year old age group.

Drug Use Among Urban Students

Tables 11-14 present data regarding the drug use patterns of the urban pupils participating in the survey. In summary, these data show the following:

Marihuana. Only one student in the urban category, a male in the 16-17 year old age group, reported any usage of marihuana. This student admitted to using it from 1-5 times and to still be using it.

Amphetamines/Barbiturates. There was no reported involvement with amphetamines and/or barbiturates by the urban sample responding to the questionnaire.

LSD. There was no reported involvement with LSD by the urban sample responding to the questionnaire.

Narcotics. There was no reported involvement with narcotics by the urban sample responding to the questionnaire.

Other substances. Approximately 9 percent of the urban students admitted they had used other substances, with over one half the group continuing to use them. All reported incidences of use occurred among males and clustered in the 14-15 and the 16-17 year old age groups.

Drug Use Among Rural Students

Responses concerning drug involvement among the rural students were analyzed according to several factors. These data are presented in Tables 15-18 and may be summarized as follows:

TABLE 11

Responses Concerning Personal Use of Marihuana, Amphetamines/Barbiturates, LSD, Narcotics, and Other Substances by Urban Students

Category	Response	Total Using No.	Total Using %	1-5 Times No.	1-5 Times %	6-10 Times No.	6-10 Times %	11+ Times No.	11+ Times %	Still Using No.	Still Using %
Marihuana	YES	1	1.9	1	1.9	0	0.0	0	0.0	1	1.9
	NO	53	98.1	53	98.1	54	100.0	54	100.0	53	98.1
Amphetamines/ Barbiturates	YES	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	NO	54	100.0	54	100.0	54	100.0	54	100.0	54	100.0
LSD	YES	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	NO	54	100.0	54	100.0	54	100.0	54	100.0	54	100.0
Narcotics	YES	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	NO	54	100.0	54	100.0	54	100.0	54	100.0	54	100.0
Other Substances	YES	5	9.3	3	5.6	1	1.9	1	1.9	3	5.6
	NO	49	90.7	51	94.4	53	98.1	53	98.1	51	94.4

TABLE 12

Responses Concerning Personal Use of Marihuana, Amphetamines/Barbiturates, LSD, Narcotics, and Other Substances by Urban Students According to Sex

Category	Sex	Total Using No.	1-5 Times No. %	6-10 Times No. %	10+ Times No. %	Still Using No.	Still Using %
Marihuana	Male	1	1 2.7	0 0.0	0 0.0	1	2.7
	Female	0	0 0.0	0 0.0	0 0.0	0	0.0
Amphetamines/ Barbiturates	Male	0	0 0.0	0 0.0	0 0.0	0	0.0
	Female	0	0 0.0	0 0.0	0 0.0	0	0.0
LSD	Male	0	0 0.0	0 0.0	0 0.0	0	0.0
	Female	0	0 0.0	0 0.0	0 0.0	0	0.0
Narcotics	Male	0	0 0.0	0 0.0	0 0.0	0	0.0
	Female	0	0 0.0	0 0.0	0 0.0	0	0.0
Other Substances	Male	5	3 8.1	1 2.7	1 2.7	3	8.1
	Female	0	0 0.0	0 0.0	0 0.0	0	0.0

TABLE 13

Responses Concerning Personal Use of Marihuana, Amphetamines/Barbiturates, LSD, Narcotics, and Other Substances by Urban Students According to Age

Category	Age Groups	Total Using No. %	1-5 Times No. %	6-10 Times No. %	10+ Times No. %	Still Using No. %
Marihuana	14-15	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
	16-17	1 4.0	1 4.0	0 0.0	0 0.0	1 4.0
	18+	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Amphetamines/ Barbiturates	14-15	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
	16-17	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
	18+	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
LSD	14-15	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
	16-17	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
	18+	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Narcotics	14-15	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
	16-17	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
	18+	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
Other Substances	14-15	2 8.4	1 4.2	0 0.0	1 4.2	0 0.0
	16-17	3 12.0	2 8.0	1 4.0	0 0.0	3 12.0
	18+	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0

TABLE 14

Analysis of Responses by Urban Students Who Have Used Marihuana, Amphetamines/
Barbiturates, LSD, Narcotics, and Other Substances

Variables	Marihuana No. X2	Amph./Barb. No. X2	LSD No. X2	Narcotics No. X2	Oth. Sub. No. X2
Sex					
Male	1 0.468	0 0.0	0 0.0	0 0.0	5 2.532
Female	0	0	0	0	0
Age					
14-15	0 1.182	0 0.0	0 0.0	0 0.0	2 0.758
16-17	1	0	0	0	3
18+	0	0	0	0	0

TABLE 15

Responses Concerning Personal Use of Marihuana, Amphetamines/Barbiturates, LSD, Narcotics, and Other Substances By Rural Students

Category	Response	Total Using No. %	1-5 Times No. %	6-10 Times No. %	11+ Times No. %	Still Using No. %
Marihuana	YES	2 3.1	1 1.6	0 0.0	1 1.6	1 1.6
	NO	62 96.9	63 98.4	64 100.0	63 98.4	63 98.4
Amphetamines/ Barbiturates	YES	2 3.1	1 1.6	0 0.0	1 1.6	1 1.6
	NO	62 96.9	63 98.4	64 100.0	63 98.4	63 98.4
LSD	YES	3 4.7	3 4.7	0 0.0	0 0.0	3 4.7
	NO	61 95.3	61 95.3	64 100.0	64 100.0	61 95.3
Narcotics	YES	0 0.0	0 0.0	0 0.0	0 0.0	0 0.0
	NO	64 100.0	64 100.0	64 100.0	64 100.0	64 100.0
Other Substances	YES	4 6.3	2 3.1	0 0.0	2 3.1	3 4.7
	NO	60 93.8	62 96.9	64 100.0	62 96.9	61 95.3

TABLE 16
 Responses Concerning Personal Use of Marihuana, Amphetamines/Barbiturates,
 LSD, Narcotics, and Other Substances by Rural
 Students According to Sex

Category	Sex	Total Using No.	Total Using %	1-5 Times No.	1-5 Times %	6-10 Times No.	6-10 Times %	11+ Times No.	11+ Times %	Still Using No.	Still Using %
Marihuana	Male	2	5.3	1	2.6	0	0.0	1	2.6	1	2.6
	Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Amphetamines/ Barbiturates	Male	2	5.3	1	2.6	0	0.0	1	2.6	1	2.6
	Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
LSD	Male	2	5.3	2	5.3	0	0.0	0	0.0	2	5.3
	Female	1	3.8	1	3.8	0	0.0	0	0.0	1	3.8
Narcotics	Male	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
	Female	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Other Substances	Male	2	5.3	0	0.0	0	0.0	2	5.3	1	2.6
	Female	2	7.7	2	7.7	0	0.0	0	0.0	2	7.7

TABLE 17

Responses Concerning Personal Use of Marihuana, Amphetamines/Barbiturates, LSD, Narcotics, and Other Substances by Rural Students According to Age

Category	Age Groups	Total Using No.	1-5 Times No.	6-10 Times No.	11+ Times No.	Still Using No.
		%	%	%	%	%
Marihuana	14-15	1	1	0	0	0
	16-17	1	0	0	1	1
	18+	0	0	0	0	0
Amphetamines/ Barbiturates	14-15	1	1	0	0	0
	16-17	1	0	0	1	1
	18+	0	0	0	0	0
LSD	14-15	1	1	0	0	1
	16-17	2	2	0	0	2
	18+	0	0	0	0	0
Narcotics	14-15	0	0	0	0	0
	16-17	0	0	0	0	0
	18+	0	0	0	0	0
Other Substances	14-15	1	1	0	0	1
	16-17	2	0	0	2	1
	18+	1	1	0	0	1

TABLE 18

Analysis of Responses by Rural Students Who Have Used Marihuana, Amphetamines/
Barbiturates, LSD, Narcotics, and Other Substances

Variables	Marihuana No. X2	Amph./Barb. No. X2	LSD No. X2	Narcotics No. X2	Oth. Sub. No. X2
Sex					
Male	2 1.413	2 1.413	2 0.069	0 0.0	2 0.155
Female	0	0	1	0	2
Age					
14-15	1 0.660	1 0.660	1 1.186	0 0.0	1 0.175
16-17	1	1	2	0	2
18+	0	0	0	0	1

Marihuana. Only limited involvement (3.1 percent) with marihuana was reported by the rural pupils, although one pupil reported using it 11+ times. Usage was reported only by males in the 14-15 and the 16-17 year old age groups.

Amphetamines/Barbiturates. Responses for amphetamine and/or barbiturate use among rural pupils resulted in the same analysis as for marihuana usage.

LSD. Interestingly, admitted involvement with LSD, 4.7 percent, was slightly higher than involvement with marihuana among the rural sample. All students reporting usage also reported that they were still using the drug. Again, usage was slightly higher among males than among females and was limited to the 14-15 and 16-17 year old age groups.

Narcotics. There was no reported involvement with narcotics by the rural sample responding to the questionnaire.

Other substances. The highest area of drug use among rural pupils occurred in the other substances category, where over 6 percent indicated some usage and almost 5 percent reported still using the substances. The level of usage was slightly higher among females and slightly highest in the 16-17 year old age group.

CHAPTER V

Summary and Conclusions

Introduction

Many concerned individuals, educational groups, and governmental agencies had become increasingly alarmed about articles estimating the use of drugs by the youth of this country. According to many of these reports, marihuana, LSD and other similar products, amphetamines, barbiturates, narcotics, and common household substances had been utilized and misused. This flow of information had included both the mass media and professional literature.

The lack of information about the use of drugs was as widespread as the misconceptions about the effects of drugs. No nationwide attempt had been made to ascertain actual incidence and prevalence figures for drug use by young people. Through several small scale investigations drug misuse had been identified in every sector of education. It had become known from affluent suburban school districts to the schools of the city slums and from the campuses of higher education to the grounds of the elementary schools. Yet, with all this increased

concern, interest and efforts to obtain factual information, little attempt had been made to identify drug use patterns among the various populations within the educational structure. Specifically, no research had been reported determining the use of drugs by educable mentally retarded students. It appeared presumptuous to assume that some retarded students, especially those enrolled in public schools, had not become involved with drugs.

Statement of the Problem

This study was designed to determine the epidemiology of the non-medical use of drugs and other dangerous substances by educable retarded students. Specifically, the focus was to identify and analyze the extent to which educable retarded students used (a) marihuana, (b) amphetamines and/or barbiturates, (c) LSD, (d) narcotics, and (e) other substances of concern.

Limitations of the Study

In order to keep the study manageable, it was necessary to impose certain limitations upon the scope of investigation in regards to sample size, age range and intelligence range. The study was conducted with fifteen senior high cooperative classes for the educable mentally retarded in Alabama. Specifically involved

were all students enrolled in these classes who has a chronological age of fourteen or older.

An anonymous questionnaire was used to obtain the student information and data. This prevented any verification of the accuracy of the responses and meant that the final tabulations were dependent upon the honesty of the respondents. It must be assumed that because of the sensitive nature of the study some responses were not accurate. The use of an anonymous instrument also restricted any clarification or elaboration of responses and limited interpretations.

No attempt was made to measure the extent of knowledge about drugs the students may have had. Nor was it attempted to discover why certain students became involved with drugs or what students thought about friends and peers they knew used drugs. All responses were tallied according to group factors; there was no effort to identify individual student responses or to generalize findings to other populations or to specific classes or students.

Significance of the Study

This investigation attempted to make some determination as to the extent of drug usage among older educable retarded students. An underlying consideration revolved around determining the necessity for developing drug education programs, with related curricula and

materials, for the retarded. Additionally, an effort was made to meaningfully add to the body of research concerning the use of drugs in our country.

Procedures Used in the Study

An anonymous questionnaire entitled "Student Information Form" was constructed and made available to the students of the sample classes. This questionnaire consisted of sections allowing for student responses indicating the degree of use of marihuana, amphetamines and/or barbiturates, LSD, narcotics and other substances. Specific procedures and directions for administration of the questionnaire were developed and made available to the teachers of the sample classes.

A total of one hundred and ninety-eight questionnaires were returned, with one hundred and eighty of these determined eligible for tabulation and analysis. This final total included sixty-two questionnaires in the metropolitan classification, fifty-four in the urban classification, and sixty-four in the rural classification. On receipt, data from the questionnaires were placed on computer cards and processed on a computer utilizing an appropriate program.

Principle Findings

Because of the uniqueness of the three population classifications, data from each group were analyzed

separately. There was no attempt made to compare one population group with another or to identify contributions of individual classes to the findings for each group. All data for each group were analyzed and discussed according to total, sex, and age factors. Major findings for each of the population classifications are presented in the following sections.

Metropolitan Students

1. Better than one-third to one-half of the students reported having friends who have used drugs. Knowledge of classmates use ranged between LSD at 14.5 percent to other substances at 38.7 percent.
2. The respondents identified some personal involvement and continuing use with all the drug categories under investigation.
3. The highest percentage of use occurred in the other substances category, with one out of four students admitting some usage. Other categories in rank order of percent of use were marihuana (17.7%), amphetamines/barbiturates (12.9%), narcotics (8.1%), and LSD (6.5%).
4. A consistently higher percentage of male than female use was found for all drug categories except narcotics.

5. No definite pattern or correlation could be determined between age and use of the drugs under consideration.

Urban Students

1. Friends use of drugs was reported as ranging from LSD and narcotics at 13.0 percent each to marihuana at 27.8 percent. Classmate involvement was presented as being much lower, with no use of narcotics reported and the highest percentage at 13.0 percent in the other substances category.
2. Only the categories of marihuana and other substances were reported as having some degree of involvement.
3. Drug usage was higher for the other substance category (9.3%) than for marihuana (1.9%).
4. All admitted involvement with drugs among the urban students was by males.
5. All incidences of drug use occurred among the 14-15 and the 16-17 year old age groups.

Rural Students

1. The reported use of drugs among friends ranged from narcotics at 7.8 percent to marihuana at 23.4 percent.

2. Some drug involvement was admitted by the respondents in all categories of concern except narcotics.
3. The reported incidence of use was highest for the other substances category (6.3%). Interestingly, the second most frequently used drug was LSD (4.7%) with the marihuana and amphetamines/barbiturates categories being 3.1 percent each.
4. The level of use was higher for males than females in all categories except other substances.
5. All incidences of drug use, except for one student, occurred among the 14-15 and the 16-17 year old age group.

Conclusions of the Study

On the basis of the findings, tenable conclusions concerning the non-medical use of drugs by older educable retarded students were indicated. These conclusions included:

1. Retarded students were aware that some of their friends and peers were involved with the drugs under investigation.
2. Retarded students had used and were continuing to use marihuana, amphetamines, barbiturates, narcotics, LSD, and other substances.

3. The use of volatile and other dangerous substances by retarded students was comparatively high.
4. The use of narcotics by retarded students was comparatively limited.
5. Generally, retarded students had used drugs only to a limited incidence.
6. Generally, the use of drugs by retarded students was related to population classification, with increased percent of use associated with increased density.
7. Generally, male retarded students had used drugs more than female retarded students.
8. Generally, the use of drugs by retarded students was not related to age.

Implications of the Study

The study findings and the conclusions drawn indicated various implications. These implications included:

1. Appropriate drug education programs should be provided for retarded students. Joint or integrated offerings with regular education students might be explored in this area.
2. Drug education programs should begin prior to the high school level.

3. Drug education programs should emphasize the categories of dangerous substances and marihuana, with lesser emphasis on the categories of LSD, amphetamines, barbiturates and narcotics.
4. Appropriate drug education curricula and materials should be developed. Some possible sources are local school systems, colleges and universities, and commercial concerns.
5. Teachers now teaching educable retarded students should be urged to become familiar with the drug use situation. School systems might consider conducting in-service programs in this area.
6. College and university personnel involved in training teachers for the educable retarded should review course offerings in terms of needed drug education curricula.
7. Individual school systems should ascertain the extent of drug involvement by retarded students.
8. State special education programs should become oriented in providing assistance for drug education programs. State consultants

or supervisors should become acquainted with drug education approaches.

9. Services should be developed and provided for parents of retarded children who are involved with drugs.

Implications for Future Research

The information provided by this study indicated the need for additional research concerning the non-medical use of dangerous drugs and other substances by the educable mentally retarded. Some suggested problems for research revolve around the following areas:

1. Periodic updating of this study to appraise any changes that might occur in drug use patterns,
2. The epidemiology of drug use among retarded students in other programs and at other levels,
3. An attempt to determine the correlation between intelligence and drug use,
4. The causation factors associated with drug use by the retarded,
5. The epidemiology of other "problem" substances (i.e., tobacco and alcohol),
6. The epidemiology of drug use among retarded students based on other than questionnaire approaches,

7. The kinds of training experiences colleges, universities, and school systems might provide in order to prepare teachers of the retarded to deal effectively with drug abuse, and
8. The financing of drug education programs for the retarded.

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APPENDIX A

URBANIZED AREA ACCORDING TO THE U. S.
BUREAU OF THE CENSUS

URBANIZED AREAS

The major objectives of the Census Bureau in delineating urbanized areas is to provide a better separation of urban and rural population in the vicinity of the larger cities. An urbanized area consists of a central city, or cities, and surrounding closely settled territory. The specific criteria for the delineation of an urbanized area are as follows:

- 1a. A central city of 50,000 inhabitants or more in 1960, in a special census conducted by the Census Bureau since 1960, or in the 1970 census; or
- b. Twin cities, i.e., cities with contiguous boundaries and constituting, for general social and economic purposes, a single community with a combined population of at least 50,000, and with the smaller of the twin cities having a population of at least 15,000.
2. Surrounding closely settled territory, including the following (but excluding the rural portions of extended cities, see "urban and rural residence," above):
 - a. Incorporated places of 2,500 inhabitants or more.
 - b. Incorporated places with fewer than 2,500 inhabitants, provided that each has a closely settled area of

- 100 housing units or more.
- c. Small parcels of land normally less than one square mile in area having a population density of 1,000 inhabitants or more per square mile. The areas of large nonresidential tracts devoted to such urban land uses as railroad yards, airports, factories, parks, golf courses, and cemeteries are excluded in computing the population density.
- d. Other similar small areas in unincorporated territory with lower population density provided that they serve:
- to eliminate enclaves, or
 - to close indentations in the urbanized areas of one mile or less across the open end, or
 - to link outlying enumeration districts of qualifying density that are not more than $1\frac{1}{2}$ miles from the main body of the urbanized area.

APPENDIX B

PRELIMINARY DRAFT OF DRUG
INFORMATION FORM

General Information

This form is being used to find out the facts about young people using drugs. Many things have been said about drugs. Some of these things have been true; some have not. This form is being used to get true information. Please answer all questions truthfully.

There is no way to find out your name on this form. You will not get into any trouble by answering the questions truthfully. Please do not write your name on this form.

Doctors often have people use drugs, pills and other things when they are sick. These questions are about drugs, pills and other things that are used without being told to by a doctor.

Directions

Your teacher will read all directions and questions to you. Do not write anything until told to by your teacher.

Please fill in the blanks about your age and your sex. Use M for male and F for female. Do not write your name.

Age _____ Sex _____

For the following areas, please put an X after each sentence that best tells the truth about you. You may put an X after more than one sentence.

Marihuana - pot, grass, weed, joint

Some of my friends have tried it. _____
 Some students in this class have tried it. _____
 I have never tried it. _____
 I have tried it about 1 to 5 times. _____
 I have tried it about 6 to 10 times. _____
 I have tried it about 10 or more times. _____
 I have stopped using it. _____

Amphetamines- pep pills, uppers, speed, dexies,
bennies, crystal

Some of my friends have tried it. _____
 Some students in this class have tried it. _____
 I have never tried it. _____
 I have tried it about 1 to 5 times. _____

I have tried it about 6 to 10 times. _____
 I have tried it about 10 or more times. _____
 I have stopped using it. _____

Barbiturates- diet pills, downers, sleeping pills,
 tranquilizers

Some of my friends have tried it. _____
 Some students in this class have tried it. _____
 I have never tried it. _____
 I have tried it about 1 to 5 times. _____
 I have tried it about 6 to 10 times. _____
 I have tried it about 10 or more times. _____
 I have stopped using it. _____

LSD - acid, sugar cubes

Some of my friends have tried it. _____
 Some students in this class have tried it. _____
 I have never tried it. _____
 I have tried it about 1 to 5 times. _____
 I have tried it about 6 to 10 times. _____
 I have tried it about 10 or more times. _____
 I have stopped using it. _____

Narcotics - heroin, morphine, opium, paregoric

Some of my friends have tried it. _____
 Some students in this class have tried it. _____
 I have never tried it. _____
 I have tried it about 1 to 5 times. _____
 I have tried it about 6 to 10 times. _____
 I have tried it about 10 or more times. _____
 I have stopped using it. _____

Other substances - glue sniffing, lighter fluid,
 gasoline, paint thinner

Some of my friends have tried it. _____
 Some students in this class have tried it. _____
 I have never tried it. _____
 I have tried it about 1 to 5 times. _____
 I have tried it about 6 to 10 times. _____
 I have tried it about 10 or more times. _____
 I have stopped using it. _____

APPENDIX C

DIRECTIONS FOR ADMINISTRATION OF THE
STUDENT INFORMATION FORM

Preparation

1. Please familiarize yourself with the complete directions and follow them exactly.
2. Explain to the students that this survey is being conducted to find out true facts about student drug use. Explain that much has been said about the subject, but little factual evidence is available.
3. Assure the class members that all responses will be confidential. There will be no way to identify the students; they will not be asked to give their names. Emphasize that no one will be able to know what they put down.
4. Stress that this is not a test and that there are no right or wrong answers. Explain that it is very important not to copy or ask someone else for an answer; it is their own answer that is important.
5. Explain fully the procedures to be followed for returning the forms (see Collection). Emphasize that you (the teacher) will not see their answers.

Distribution

1. Request that everyone use a pencil to answer the questions. Explain that this will assure that their forms will not be identified.
2. Have a student distribute the forms among class members in a random fashion. Nothing should be written on the forms at this time.
3. Allow the students to look at each others' forms to see that all are identical. Invite students, if they wish, to exchange forms with one another.
4. Read the General Information section of the form to the students, emphasizing the confidentiality and the need for correct answers.

Completion

1. Have the students complete the age and sex information blanks.
2. Read the Directions emphasizing that an X is to be used and that more than one answer may be marked. Remind students that the questions apply only to themselves and that truthfulness is important.
3. Read through the first general area heading including the popular and slang names; i.e. Marihuana - grass, weed, pot, etc.
4. Tell the class to listen closely as you read through all the possible responses.
5. Read through the general area heading and the responses a second time, having the students mark the statement or statements that apply to them with an X. Remind pupils that they may mark more than one response. Example: "I have tried it about 1 to 5 times" and "I have stopped using it."
6. Complete the remaining general areas in the same manner:
 - a. Reading the area heading and popular terms.
 - b. Reading the responses through twice with students marking their responses after the second reading.
7. Please do not attempt to see the responses of the students.

Collection

1. Have a student collect the forms randomly.
2. Have another student put the forms in the stamped, addressed envelope and seal the envelope. Be sure the CLASS IDENTIFICATION SHEET is included.
3. Have another student bring the envelope to the school office for mailing.

APPENDIX D

STUDENT INFORMATION FORM

General Information

This form is being used to find out the facts about young people using drugs. Many things have been said about drugs. Some of these things have been true; some have not. This form is being used to get true information. Please answer all questions truthfully.

There is no way to find out your name on this form. You will not get into any trouble by answering the questions truthfully. Please do not write your name on this form.

Doctors often have people use drugs, pills and other things when they are sick. These questions are about drugs, pills and other things that are used without being told to by a doctor.

Directions

Your teacher will read all directions and questions to you. Do not write anything until told to by your teacher.

Please fill in the blanks about your age and your sex. Use M for male and F for female. Do not write your name.

Age _____ Sex _____

For the following areas, please put an X after each sentence that best tells the truth about you. You may put an X after more than one sentence.

Marihuana - pot, grass, weed, mary jane, hay,
hash, joint, stick, reefers

Some of my friends have tried it. _____
Some students in this class have tried it. _____
I have never tried it. _____
I have tried it about 1 to 5 times. _____
I have tried it about 6 to 10 times. _____
I have tried it about 10 or more times. _____
I have stopped using it. _____

Amphetamines and/or Barbiturates- pep pills, uppers,
speed, dexies, bennies, crystal, diet pills,
sleeping pills, downers, goof balls

Some of my friends have tried it. _____
Some students in this class have tried it. _____

I have never tried it. _____
 I have tried it about 1 to 5 times. _____
 I have tried it about 6 to 10 times. _____
 I have tried it about 10 or more times. _____
 I have stopped using it. _____

LSD - acid, sugar cubes, purple haze, orange sunshine

Some of my friends have tried it. _____
 Some students in this class have tried it. _____
 I have never tried it. _____
 I have tried it about 1 to 5 times. _____
 I have tried it about 6 to 10 times. _____
 I have tried it about 10 or more times. _____
 I have stopped using it. _____

Narcotics - heroin, morphine, opium, paregoric,
codeine, horse, smack, hit

Some of my friends have tried it. _____
 Some students in this class have tried it. _____
 I have never tried it. _____
 I have tried it about 1 to 5 times. _____
 I have tried it about 6 to 10 times. _____
 I have tried it about 10 or more times. _____
 I have stopped using it. _____

Other substances - glue sniffing, lighter fluid,
gasoline, paint thinner, aerosol cans, nutmeg,
cough syrup, cleaning fluid

Some of my friends have tried it. _____
 Some students in this class have tried it. _____
 I have never tried it. _____
 I have tried it about 1 to 5 times. _____
 I have tried it about 6 to 10 times. _____
 I have tried it about 10 or more times. _____
 I have stopped using it. _____

APPENDIX E

CLASS IDENTIFICATION SHEET

Please complete the following information as best as possible. Return this sheet with the student forms.

Name: _____

School: _____

System: _____

Class information:

Enrollment Boys _____ Girls _____

C. A. range _____

M. A. range _____

I. Q. range _____

Date of administration of survey form: _____

Comments: _____

APPENDIX F

THE UNIVERSITY OF ALABAMA
UNIVERSITY, ALABAMA 35486

COLLEGE OF EDUCATION
DEPARTMENT OF SPECIAL EDUCATION

P.O. BOX 2392

Dear Sir:

The Department of Special Education, University of Alabama, is considering the development of drug education materials for educable mentally retarded students. As you are well aware, the contemporary drug scene is increasing in complexity. The obtaining of factual information and the developing of appropriate materials will greatly assist local school systems in meeting the challenge presented.

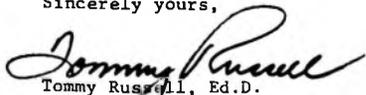
A most essential part of this project will be to assess the extent and degree of drug use among the educable mentally retarded. To assist in obtaining this necessary information, selected school systems are being invited to participate in a survey of the drug usage patterns among cooperative special class students.

This survey will utilize an anonymous questionnaire to be completed by each student, under teacher direction. All necessary materials and directions will be provided. Absolute assurance is made that this questionnaire is completely anonymous and that no identifying information concerning responses will be made. A copy of the questionnaire is enclosed.

The survey will be conducted by Mr. Tracy Baldrate, Instructor in the Department of Special Education, as part of his doctoral studies. Dr. Tommy Russell will direct the project and review the findings.

If you would be willing to have the cooperative class students in your school system participate in this survey, please complete and return the enclosed card by November 19, 1971. Following receipt of this information, survey materials will be mailed directly to the special classes selected for participation. If you wish, a summary of the results will be sent to you. Your cooperation in this endeavor is earnestly solicited and will be greatly appreciated.

Sincerely yours,



Tommy Russell, Ed.D.
Assistant Chairman
Department of Special Education

TR:lw

APPENDIX G

PLEASE RETURN PRIOR TO NOV. 19, 1971

I () will () will not allow participation of
educable mentally retarded cooperative class
students in the survey of drug usage.

Superintendent: _____

School system: _____

APPENDIX H

THE UNIVERSITY OF ALABAMA
UNIVERSITY, ALABAMA 35886

COLLEGE OF EDUCATION
DEPARTMENT OF SPECIAL EDUCATION

P.O. BOX 2592

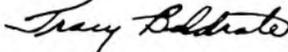
Dear Special Class Teacher:

The Department of Special Education, University of Alabama, is considering the development of appropriate drug education materials for educable mentally retarded students. To assist in this task, it is essential that the drug use patterns of educable mentally retarded students be ascertained.

An anonymous questionnaire designed to provide this information has been developed and is to be administered in selected cooperative special classes. Your superintendent has been familiarized with this project and has agreed to the participation of your class.

Your part in this survey is extremely important. Please familiarize yourself with the STUDENT INFORMATION FORM and with the DIRECTIONS FOR ADMINISTRATION OF THE STUDENT INFORMATION FORM. All necessary directions and materials for administration are included. It will be appreciated if you will have the questionnaire completed and returned prior to December 10, 1971. Any comments that you may have concerning the survey will be most welcomed. Thank you for your cooperation and participation.

Sincerely,



Tracy Baldrate
Instructor
Department of Special Education

TB:lw

APPENDIX I

THE UNIVERSITY OF ALABAMA
UNIVERSITY, ALABAMA 35486

COLLEGE OF EDUCATION
DEPARTMENT OF SPECIAL EDUCATION

P.O. BOX 2592

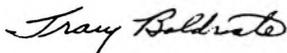
Dear

Sometime ago, a packet containing materials for a drug survey of educable mentally retarded students was mailed to you. At that time it was requested that you have the materials completed by your students and returned prior to December 10, 1971.

As of this date the materials for your class have not been received. To assure that the results of this survey will be as accurate as possible, it is necessary that complete data be obtained. The information concerning your class will be most valuable in this survey.

It will be most appreciated if you will have the materials completed and returned as soon as possible. A stamped, return addressed envelope was provided for this purpose with the materials previously mailed to you. If you have any questions concerning the materials please feel free to contact me. Thank you for your cooperation and concern in this important undertaking.

Sincerely,



Tracy Baldrate
Department of Special Education

TB:lw