Comparative Effectiveness of Therapeutic Strategies on Drug Knowledge and Drug Attitude in Inpatient Psychiatric Substance Abuse Population

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COMPARATIVE EFFECTIVENESS OF THERAPEUTIC STRATEGIES ON DRUG KNOWLEDGE AND DRUG ATTITUDE IN INPATIENT PSYCHIATRIC SUBSTANCE ABUSE POPULATION

by

Amber Haque

A Dissertation Submitted to the Faculty of The Graduate College in partial fulfillment of the requirements for the Degree of Doctor of Philosophy Department of Psychology

Western Michigan University Kalamazoo, Michigan December 1993
This study examined the effects of instructional strategies on the change of knowledge and attitude scores in mentally ill subjects with a history of substance abuse. Twenty subjects from a state psychiatric hospital were randomly divided into one control and three experimental groups. The study period was ten weeks with each session lasting fortyfive minutes, twice per week. Subjects studied issues relating to drug abuse outside scheduled sessions as they pleased. Pre- and post-test scores were measured by a drug abuse questionnaire developed at the Pennsylvania State University. Hypotheses formed were: (a) drug education improves knowledge and attitude in inpatient psychiatric population; (b) individual-group instruction is more effective strategy than either approach alone, in enhancing drug knowledge and improving attitude towards drugs; and (c) drug education brings about increased improvement in the interest area of the abuser for both knowledge and attitude. Analysis of variance procedure and Duncan’s Multiple Range Test were used to test the hypotheses.

The results showed the following: (a) Drug education significantly improves
knowledge and attitude in most patients; (b) individual-group instruction combined is more effective in bringing positive changes than either method alone; (c) although subjects showed improvement in the knowledge of their interest area in post test, and also showed improved attitude in the areas of "health" and "social" attitudes, experimental subjects' "general" attitude decreased in post test; (d) improved knowledge does not automatically result in improved attitude; and, (e) it was also derived that with no treatment, a patient's substance abuse behavior and attitude can deteriorate over time.
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Comparative effectiveness of therapeutic strategies on drug knowledge and drug attitude in inpatient psychiatric substance abuse population

Haque, Amber, Ph.D.

Western Michigan University, 1993
ACKNOWLEDGEMENTS

I am dedicating this Ph.D. to my mother who imbued in me the value of education, to my wife Nayyer, whose patience, love, and support helped me through this task, and to my brother Syed who helped me immigrate to this country which allowed me an opportunity to pursue my education. Without their encouragement this work would not have become possible.

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Amber Haque

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Substance abuse in the mentally ill is a significant and common problem. Several studies have corroborated the presence of mental illness among substance abuse populations (Abraham, 1980; Brill & Nahan, 1984; Hekimon & Gershan, 1968; Hill, Haertzen & Davis, 1962; Herl 1976; McLellan & Druley, 1977; Powell, Penick, & Othmer, 1982). Data from psychiatric hospitals suggest that over 50% of all admissions have a significant substance abuse history (Atkinson, 1973; Crowley, Chesluk & Hart, 1974; Fischer, Halikas, & Baker, 1975; McKelvy, Kane & Kellison, 1987; McLellan, Druley, & Carlson, 1978; Pepper & Ryglewicz, 1984; Safer, 1986; Test, Knoedler, & Allness, 1985).

In recent years, the number of such patients with combined psychiatric and substance abuse disorders (commonly termed "dual diagnosis") seems to have increased (Balcerzack & Hoffman, 1985; Davis, 1985; Pepper & Ryglewicz, 1984; Rutkowski & Jansen, 1985; Schuckit, 1983). This could be in part due to an increase in drug abuse by general population over the last several years or due to a growing awareness of the need for a category of dual diagnosis. Also, with deinstitutionalization, more mentally ill people are being sent into the community with chances of developing or returning to substance abuse.

According to Segal (1988), the abuse of substances serves at least three basic
purposes: (1) to overcome unwanted feelings or emotions; (2) to provide a new, exciting, or stimulating experience; or (3) to satisfy peer influence. Patients are admitted to a psychiatric hospital if they receive a mental illness diagnosis; a diagnosis of substance abuse alone does not result in admission to a psychiatric hospital. Treatment priorities are determined by the primary diagnosis for which the patient is admitted to the hospital. In the psychiatric hospital, the psychiatric disorder is first brought under control, then the patient's substance abuse problem is addressed. The substance abuse treatment typically consists of a referral at discharge (Menicucci, Wermuth, & Sorensen, 1988). In substance abuse clinics, often the psychiatric problems are dealt with by sending the patient back to the psychiatric hospital. As a result, these dually diagnosed patients are shuttled back and forth between the public hospital, community, and substance abuse clinics, often falling through the cracks of the system and are lost to treatment or treated in all places with conflicting methods and confusing effects.

Studies show that this dually diagnosed population presents some very serious and challenging problems to the mental health profession. Substance abuse patients show a "lack of purpose in life" and increased "psychiatric proneness" (Newcomb, Bentler, & Fahey, 1987). Dually diagnosed individuals have an increased suicide rate compared to people with only one problem, either of mental illness or substance abuse (Frances & Franklin, 1989) and overall, they exhibit a significant deficit in their self-care areas (Compton, 1989). Dually diagnosed patients also are dangerous to themselves or others in hospital wards
showing poor impulse control resulting in verbal and physical aggression and exhibiting lack of cooperation to staff redirection (O'Farrell, Connors, & Upper, 1983). Substance abuse also complicates diagnosis in psychiatric patients, interferes with treatment and contributes to relapse (Alterman, LaPorte, & Erdlen, 1982; Hall, Popkin, DeVaul, & Stickney, 1975; Tsuang, Simpson, & Kronfol, 1982).

Due to the seriousness of substance abuse problems, the National Institute of Mental Health (NIMH), has funded studies to gather information on the problems of these dually diagnosed individuals and ways to improve treatment strategies. NIMH awarded funds to 13 states for community based research with this population in the fiscal year 1988 (NIMH, 1987). Expenditures in the United States for substance abuse prevention and treatment exceeded $1.3 billion in 1986 (USDHHS, 1986).

Despite the seriousness of these problems, there is a lack of research in providing effective therapeutic direction to the clinician in dealing with this dually diagnosed population (Kofoed, Kania, Walsh, & Atkinson, 1986). Most recent research deals only with a diagnosis and classification of these patients without significant references to treatment strategies (Cohen, 1984; Dackis & Gold, 1983; McLellan, Childress, Griffeth, & Woody, 1986; Uhde, Redmon, & Kleber, 1982). Psychiatric hospital unit directors agree that there is no articulated plan for the treatment of dually diagnosed patients (Menicucci, Wermuth, & Sorensen, 1988). As a result, a number of pressing questions can be identified. What treatment
approaches are available for this population? Are certain approaches better than the others? What medications are most advantageous for these patients? What about various drug interactions? Should these patients be treated in a substance abuse program, a psychiatric unit, or some combination? What about patient rights and the role of family in treatment planning? How can we combine the best programs?

The purpose of this research is to provide interventions to experimental groups and compare the effectiveness of instructional strategies. There is a control group for which no treatment is provided. The experimental groups are categorized with five subjects in each and treatment provided either individually, in group, or individually and in group. Research attempts at finding if dually diagnosed patients will benefit most if seen individually, or in group, or both individually and in group. A detail analysis of experimental data will be done and graphs interpreted in the analysis and discussion chapter.

Patterns of Drug Choice

Different drugs will have different effects on the abuser due to the different pharmacological properties of each drug. Also, if more than one substance is used at a time, they all have more complex and interrelated effects. If the pattern of substance abuse is monitored or traced in the patient, it may give important clues in the understanding of disease among particular subgroups of psychiatric patients who abuse substances (e.g., Schneier & Siris, 1987), as the abuse of a
particular substance tells the therapist about patient’s reasons and circumstances for selection of that substance.

In recent years, all sorts of shifts have been noted for each abused chemical agent, some sloping down, some essentially flat, and some starting upward. A federal report from 1978 provides us with some good estimates of the current substance abuse situation (extrapolated to the mentally ill population): alcohol, marijuana, heroin, methadone, barbiturates, minor tranquilizers, amphetamines, cocaine, LSD, and other hallucinogens and inhalents. The mentally ill population is known to abuse psychoactive drugs affecting perception, memory, emotional states, psychomotor functions, and cognitive process; many of these have the capacity to cause irreversible damage to the central nervous system. Learning is particularly vulnerable to disruption by psychoactive drugs. Significant amounts of research can be found on how learning and memory are affected by drug abuse (Dunn, 1980; Leavitt, 1982; Miller & Branconnier, 1983).

Schuckit (1979, pp. 9) stated that "All drugs of abuse cause intoxication, each induces psychological dependence, and all are self-administered by an individual to change a level of consciousness or to increase his psychological comfort. Each class of drugs has its dangers, with patterns of problems differing between drug classes". The physical signs and symptoms and the most prominent psychological difficulties are summarized in Table 1 (adapted from Schuckit, 1979, pp. 9).

Segal (1986), in a study of the patterns of drug use by adolescents and
Table 1
Clinically Significant Drug Problem by Class

<table>
<thead>
<tr>
<th></th>
<th>Panic</th>
<th>Flashback</th>
<th>Toxic</th>
<th>Psychosis</th>
<th>OBS*</th>
<th>Withdrawal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downers</td>
<td>-</td>
<td>+</td>
<td>++</td>
<td>++</td>
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<tr>
<td>Uppers</td>
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<td>+</td>
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<tr>
<td>Opiates</td>
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<td>-</td>
<td>++</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Cannibas</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>Hallucins</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Solvents</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>++</td>
<td>-</td>
</tr>
</tbody>
</table>

* Organic Brain Syndrome

adults, found that the sequence or pattern of experiences with different drugs changed over time; the pattern of use followed by young adults when they were adolescents differ from the pattern or sequence of drug taking behavior predicted by adolescents today. Segal (1986) further concluded in studies that the view that all forms of drug taking behavior are a function of disturbed personality is unrealistic and, from a contemporary research perspective, unproductive.

Customarily mental health and substance abuse services are often viewed as separate and quite different. Not only are they funded, staffed, and administered differently, but they are generally also geographically differentiated. As indicated earlier in this chapter, this dually diagnosed population continues to increase and
presents serious challenge to the administrator as well as the clinician. It has become very obvious that there is a need for formalized treatment plan for this group. Even though mental health and substance abuse services may be separated, awareness of combined psychiatric and substance abuse problems, communication, referral, and coordination may result in better diagnosis and treatment. The philosophy of coordinating drug and alcohol treatment with mental health services in an effort to address patient needs and treat combined disorders appears to be a step toward bridging the gap between the separate services delivery system.

The treatment method used for the dually diagnosed population is generally the same as it is for the general substance abuse population. Let us review some of the treatment approaches available in current clinical practice and we will try to group them together, so we have a nice set of strategies to look at and choose from in treating the dually diagnosed. When needed, treatment procedures could be individually determined for the patient. Clinical researchers (McLellan, et al., 1984; Miller & Hester, 1986) have urged exploration of strategies that would match individuals with the treatment best suited to their personal characteristics, needs, and goals, to maximize the prospect of favorable outcomes.

Inpatient Treatment

A general rule of thumb for psychiatric admission is that a patient will be admitted to the hospital whenever there is a danger of harm to self or others
from the patient. The choice of inpatient versus outpatient treatment depends on severity of symptoms, stage of withdrawal, medical and psychiatric complications, polydrug abuse, patient cooperation, ability to follow instructions, social support systems, and past history. Patients stay at the hospital for several months before discharged into the community, however, there is no data to support hospitalization of more than two or three weeks for the average patient (Schuckit, 1979; Edward et al., 1977; Brown & Yalom, 1977; Briddell & Nathan, 1976). Of course, common sense dictates that individuals with severe medical problems or persistent organic brain syndromes or those with very unstable life situations might require longer care. The patient group selected for this study meet the latter criteria due to the chronicity of their illness, and have an average hospital stay of over 30 days. Inpatient treatment is necessitated for alcoholic detoxification. Also, patients with affective disorder and secondary alcoholism are best treated in an inpatient setting (Schuckit, 1979). If a patient has active suicidal ideation, care is given in a psychiatric facility where suicide precautions can be taken. After detoxification, active pharmacologic treatment of the affective disorder can be carried out. Medication use is a very common form of treatment, especially in inpatient setting. Frances and Franklin (1989) recommended the following medication regimen for treating alcohol dependence/withdrawal: Chlorodiazapoxide, thiamine, folic acid, multivitamin, and magnesium sulfate. Methadone maintenance has been the predominant form of treatment for opioid drug dependency, involving a large number of participants who have shown a
moderately high level of success as compared with other treatment methods. Dole and Nyswander (1976) recommend oral methadone as a substitute for heroin and believed it to be suitable for maintenance of addicts. For phencyclidine (PCP) dependence, intravenous diazepam is the drug of first choice, but antipsychotics may occasionally be necessary as long as they are used with caution because of the anticholinergic psychosis in certain cases (Frances & Franklin, 1989). Valium is used as an adjunct to psychotherapy in the treatment of hallucinatory type frightening experiences. Antabuse is a promising drug for the treatment of alcoholics, but it has dangers and cannot be given to patients with serious medical disorders (Kitson, 1977). For nicotine abuse, nicotine gum chewing is a pharmacological substitute approach in which smoking behavior is interrupted while maintaining blood levels of nicotine to minimize withdrawal (Ritz, 1985).

It is important, however, to recognize the potential dangers associated with inpatient care which include exposure to risks of hospital acquired infections, physical or emotional harm by staff or other patients, loss of income or job, embarrassment among peers, etc. In addition, the patient is treated in an artificial environment, where lessons learned may not readily generalize to everyday living (Schuckit, 1979).

Psychotherapies

"Psychotherapy" is a standard form of treatment in important settings. It
generally centers on the "here and now" of the patient's life, giving him a chance to discuss his adjustment to his life without substance abuse and to the stresses of job, friends, and family, with a focus on the reactions of those around him and on how to handle situations in which he is most likely to return to substance abuse. Comparisons of group and individual psychotherapy for substance abuse problems reveal that group therapy is as effective (Emrick, 1975). Some authors indicate that group therapy has specific advantages, such as allowing the patient to share his feelings with a number of other people (Forrest, 1975). Group therapy represents a procedure in which persons with similar problems are able to relate to each other in a therapeutic setting. There are many different types of group techniques and they may range from traditional supportive groups to such techniques as psychodrama, marathon groups, transactional group, and encounter groups, among others (Segal, 1988; pp. 321). Some authors however, indicate that group therapy is not as effective treatment in itself (e.g., Solomon, 1983). There has been very little research evidence to support the efficiency of individual psychotherapy (Solomon, 1983). In actual treatment programs, a desirable practice may be to involve patients in active groups and then do individual therapies as a follow up on ongoing basis.

Behavioral Approaches

Behavioral approaches represents the systematic application of behavioral methods based on either classical or operant conditioning procedures. These may
include the offering of supports like biofeedback (Steffen, 1975), which teaches
the patient how to relax and handle stress. One well-known, easy to learn means
of reducing felt stress is progressive relaxation training (Polley, et al., 1979).
Another behaviorally oriented intervention, assertiveness training, is based on the
premise that on the midst of their dependency, most patients do not learn how
to express their desires and frustration (Briddell & Nathan, 1976). Aversive
procedures involve the pairing of the undesirable behavior with a strong aversive
stimulus, thereby conditioning the person to avoid the negative behavior. The
aversive stimulus can be either a chemical agent, electrical stimulation, or aversive
imagery. In contrast to chemical technologies, electric aversion conditioning has
not found to be effective (Cammon et al., 1981; Miller & Huster, 1980). Systematic
desensitization is a behavioral approach that involves the presentation of a
heirarchy of anxiety-producing situations to clients in state of relaxation induced
by progressive relaxation training (Wolpe, 1973). The training is applicable to the
reduction of emotions that are instrumental to a client's abuse of alcohol, but not
directly to the use of alcohol itself, and as such the method has only rarely been
utilized as the sole component of a behavioral prescription for substance abuse
(Nathan, 1978).

Outpatient and Ancillary Services

Outpatient treatment, provided by either private or public funded programs,
is the type of treatment most often employed for individuals experiencing alcohol
related problems. Outpatient services may be delivered by units in the general hospitals, veterans hospitals, psychiatric illness, specialized alcohol treatment facilities, or community mental health centers, or by self-help groups (Segal, 1988, pp. 313). Family involvement is highly encouraged especially in outpatient programs. Research studies suggest that strategic family interventions are very effective in the treatment of multiple substance abusing adolescents (Szapocznik et al., 1986). One of the outpatient treatments has been referred to as the therapeutic community approach (Cummings, 1979), which emphasizes character restructuring through the techniques of confrontation, humiliation, and community responsibility, incorporating a level approach with punishments and rewards. Another approach involves the combined, concurrent method of alcoholics and drug addicts within the same setting. Carroll and his group at Eagleville Rehabilitation Hospital in Pennsylvania have presented extensive clinical and research data concerning the feasibility and effectiveness of "combined treatment" (Carroll & Malloy, 1977; Carroll & Schnoll, 1982).

There are many other services available that do not necessarily comprise essential components of a substance abuse program but which, if available, can enhance those services already integrated into program design. There are outreach centers in the community, where specialists make home visits or carry out special services for patient or their families.

Alcoholics Anonymous (AA) chapters have expanded in more than ninety countries, and an estimated worldwide membership of over one million in 30,000
groups, AA is the dominant treatment initiative in alcohol programs (Glasser & Ogborne, 1982). While it may be argued that AA is not a treatment method but a philosophy of recovery, it is so often used as a treatment mode that the distinction is academic (Tournier, 1979). The belief is that only an alcoholic is capable of working with another alcoholic because only such a person is knowledgeable about the alcoholism and has the experience to deal with the denial and resistance that the client will demonstrate while in treatment.

Narcotics Anonymous (NA) has adopted the same format and philosophy as AA; it has recovering addicts and provides patients with additional role models who have successfully quit using drugs and are using the program like they abuse themselves.

Treatment Effectiveness

The issue of treatment effectiveness has been examined by Vaillant (1983), who concluded that "treatment effectiveness may have been exaggerated...in an effort to justify to Congress and to health insurance companies their enormous expenditure in the treatment of alcoholism" (pp. 9-10). Outcome research, however, has not been as generally lacking as Vaillant has implied. Emrick (1974), for example, after an exhausting review of psychologically oriented treatment programs, concluded that "the vast majority (about two thirds of all clients) are improved or abstinent, indicating that once an alcoholic decides to do something about his drinking and accepts help, he stands a good chance of improving" (pp.
Most evidence, despite some research limitations, indicates that persons undergoing any form of intervention are better for short periods of time subsequent to their treatment (Keller, 1979). Clinical interventions also help to prevent death and to deal with crisis situations. A suicidal or homicidal condition or any of the symptoms of psychosis needs immediate attention of the therapist for safety of the patient and that of others. The treatment program provides support and assistance to the families of problem drinkers and initiates education and prevention programs in communities. But if treatment programs are to demonstrate greater effectiveness, it is imperative that they begin to move with the times, which means the clinicians start to utilize both the state of the art and integrated technology in dealing with this difficult population. No longer, in light of recent developments, can a single approach be justified. In the drug abuse area, there is a growing body of evidence that indicate that some treatment is better than no treatment. Simpson and Sells (1982), concluded that treatment was effective in diminishing recurrent drug abuse and antisocial behavior.
CHAPTER II

METHOD

Subjects and Setting

Twenty subjects were selected from four different units at a state psychiatric hospital from a pool of about 100 patients. These subjects met the selection criteria for study (mentioned in procedure below) and signed informed consent for participation in research. There was a need for four groups of subjects with five subjects in each group totalling twenty subjects in all for this research. Larger group size was not possible due to a lack of dually diagnosed (DD) patients on chronic care units. Subjects from short-term care units were not taken as the transfer/discharge period from these units was generally less than the time required for study. Subjects age ranged from 21 years to 62 years and the minimum educational background reported by one subject was sixth grade education. Most subjects had high school diploma or GED and some subjects had a few years of college. Subjects' primary diagnosis at the hospital was psychiatric and secondary diagnosis was substance abuse. In some cases a secondary diagnosis was not given but was known to unit staff through patients' social history. With the exception of one or two subjects, all had used an illegal substance within the last year. Ten patients carried a primary diagnosis of "schizophrenia chronic
undifferentiated type", 5 were schizo-affective disorders, 3 were "schizophrenic paranoid", and 2 had a diagnosis of "bipolar disorder". Ninety percent of the subjects were public pay who depended on the state mental health system for support, treatment, and living arrangements (community placement), etc. The subjects follow a given schedule each day which is prepared and reviewed by a treatment team (psychiatrist, psychologist, social worker, nurses, activity therapist, and other professional and paraprofessionals) on a weekly basis. The treatment team for each involved unit allotted a certain time for the instructional activities for substance abuse education, and subjects were given written schedules each week that reminded them of each class. Most subjects did not exhibit significant psychotic behavior during this period making their meaningful participation in the study possible. Three subjects demonstrated significant psychotic behavior (e.g., talking about irrelevant issues, laughing inappropriately, looking at the ceiling or walls, shaking their head, talking to themselves or unseen persons, etc.) during the sessions, of which two were controlled within days, but one did not. This subject (JC) also missed regular attendance in assigned group and did not cooperate/participate even though he may have attended. There was at least one subject who participated in almost all sessions but refused to fill out questionnaires before or after study, because he believed it may be used against him (may delay his discharge from hospital or may affect future treatment). He constituted as an extra subject in the study for the individual-instruction group. No data is available for this subject. Almost all subjects had a "ground permit" allowing off
unit access. The main criteria for granting this is that a patient is cooperative and showing progress in his treatment goals as measured by the objectives in his "Individual Treatment Plan". The participating subjects were also not at risk of running away or hurting self or others while supervised or unsupervised, off unit.

The hospital has fourteen units out of which four were selected for study. Each hospital unit has approximately twenty five patients divided into east and west dorms. There are several private bedrooms on each unit given to a patient depending upon his needs (e.g., health reasons, behavior problems, etc.). Units generally have two dayrooms where various activities, classes, games, etc., are offered by unit staff. Both dayrooms have T.V. sets and one dayroom has activity equipments like pool table, ping pong table, etc. Smoking is permitted in only one dayroom out of the two. There are generally two "visitors room" on each unit where patients can smoke only when supervised by a unit staff or patient's family. The "visitors room" can accomodate up to six persons at a time. Individual sessions were held mostly in these rooms that were distraction free when the door was shut. There was sufficient light and exhaust/window in the room allowing the researcher to conduct a session comfortably for the specified duration. Group sessions were generally conducted in a dayroom that was unoccupied. Appropriate seat arrangements were made for subjects so they could sit in a circle or a row facing the researcher. Writing materials and a table was provided for subjects. Use of chalkboard was made where it was available. Chalkboards were not used in individual sessions or when groups were held in the "visitors room".
VCR/TV monitor was brought into the dayroom to show videotapes on substance abuse issues. Unit kitchens provided carts and other necessary items that were used for providing coffee to the subjects. Units and the rooms always had sufficient light and appropriate temperature providing subjects and staff the needed comfort. A schedule of daily events (including substance abuse classes) were posted on subjects' lockers or doors to remind them of their assigned activities. All units are locked and have a visitation policy. Treatment team members from each unit showed considerable interest in the study and periodically asked about patient progress. Although data was not shared with anyone for confidentiality reasons, a general statement of progress was casually made to the unit staff without reference to subjects' names. The hospital has its own library which provided ample materials related to the study. Unfortunately, it did not have updated or too many videotapes on substance abuse which may have proven useful. However, the booklets provided by the library were unanimously liked by all subjects.

Materials

Text materials from the "Fundamentals of Substance Abuse Counseling" (prepared by the speciality program in Alcohol and Drug Abuse [SPADA] at Western Michigan University and Office of Substance Abuse, Lansing) was presented to each subject in a structured manner (see appendices for details). Hazards of substance abuse transparencies were shared and discussed (also in
appendix). Various booklets on drug abuse, alcoholism, addiction, etc. were distributed and discussed in the sessions. Substance abuse videotapes collected from hospital library was shown and discussed. Added materials from relevant texts were also distributed to subjects and discussed individually and/or in groups. The drug knowledge and attitude questionnaire was also reviewed and items discussed. Use of chalkboards in dayroom proved to be very helpful. It helped subjects see and remember important points of discussions per report of some subjects. Cigarette smoking was allowed for subjects during these sessions as this played an important role in their participation. General opinion of over ninety percent subjects was that "it keeps you going" or that "I can concentrate more". Subjects brought their own cigarettes or borrowed from one another during session. Cigarette smoking or borrowing was not encouraged. Coffee was also provided in some sessions in order to maintain subject attendance and participation. Most subjects wanted caffeinated beverages, which was not possible on units due to hospital policies. Some subjects also wanted snacks which was also not possible due to the timing of sessions. This matter was not pursued further because most subjects did not show any interest for snacks, and some in fact suggested that it will be distracting during classes to bring in food items.

Dependent Variables

Drug knowledge and drug attitude were measured on a drug education evaluation scale developed by the Pennsylvania State University (PSU) in 1979. The
two parts of the PSU Drug Education Evaluation Scale were administered before the instruction began and after the instructional sessions ended. Part I of the scale (Drug Knowledge) consists of forty nine items and one more item was added to the scale by the researcher so as to make computation of data easier with an even number fifty. Part I items tap knowledge of the subject in various areas of drug abuse. It addresses uppers, downers, and all arounders; their hazards on the effect on human being, etc. It also asks how certain drugs are classified legally by the Federal Government. Some questions are more difficult asking biological aftermath of using, for example, LSD or PCP. Technical information is also asked relating to problems associated with alcohol use. The questions are mostly multiple choice asking subjects to circle the right answer from among a few options. Part II of the scale (Drug Attitude) has fourteen items that tells the reader about the subjects' attitude towards the use and abuse of drugs. In some cases a subject may check an "opinion" category, but in every case the subjects were encouraged to elaborate on their responses/attitude explaining why they checked a certain category of response. Subjects were encouraged to answer all questions and not leave any as not responding or a "don't know" response will not give them any credit. For the control group, responses were measured similarly, except that there were no interventions given by the researcher. The computation of the data from these measures were intended to show the reader whether interventions changed a subject's knowledge and attitude towards substance abuse, and also, which category of subjects
benefitted most from intervention and why. The researcher also attempted to find if drug education brings about relatively more change in the specific area of interest of the drug abuser. The drug knowledge scale was divided into four separate categories: (1) Uppers, (2) Downers, (3) All-arounders, and (4) General Information. Subjects' knowledge were also measured pre and post intervention to see if any noticeable change is present in the above specific areas, given the usage history of a subject. Graphs are given in the results chapter showing differences in pre and post study data and analyses are made in the discussion chapter. For those subjects who attended any similar groups or classes at the hospital, a description and analysis is given in the following chapter. For subjects who dropped out (one from control group and one each from groups B and C), extra subjects were taken and identical response measurement and intervention was provided. Fortunately, subject loss occurred in the early part of the study, and replacements were available, so the study was not seriously affected and was continued as planned. The post study questionnaire was affected in at least one subject's case, where severe psychotic symptoms were being displayed and the subject was extremely delusional and uncooperative. He could not complete the post study questionnaires fully immediately after the end of the study, but finished about a week later upon second request. These behaviors occurred towards the end of the study and replacement of this subject was not possible at that time.

The researcher contacted the PSU for more information on the scales, but
there was not any available. The researcher was informed by the Department of
Education, PSU, that they do not use the scale any more but indicated no objec-
tion for the use of this scale by this researcher. As the scales are a set of simple
right or wrong answers (a survey primarily), there was no major concern for the
validity, reliability, and standardization issues of the scale. It was arbitrarily
judged by the researcher that a subject with fourth grade education will easily
comprehend and answer the questions. But a stricter criteria was established for
eligible subjects (see procedure).

Procedure

The pre-post between group design was used in which data was collected
before and after intervention strategy from four different groups, each consisting
of at least five subjects. There was a need of four groups of subjects with five
subjects in each group, totalling twenty in all for this research. Subject selection
from four different units of a psychiatric hospital was based on the following
criteria:

1. Subjects are not diagnosed as mentally retarded or developmentally dis-
abled (should have "normal" IQ).

2. Subjects are currently not exhibiting behavior problems (injurious to self
or others, verbal altercation with others, uncooperative to unit routine or pro-
cedures, not asleep in bed during awake hours, not exhibiting extreme withdrawal,
etc.) that would interfere in their cooperation or meaningful participation in
research.

3. Subjects are their own legal guardian and can read, understand, and sign informed consent to participate in research, and verbalize their understanding to the researcher. It was assumed by the researcher that if the subjects are not their own guardians, they may not be qualified subjects for study as the research demanded reading, comprehension, and writing skills and concentration. It is often due to a lack of these skills that a legal guardian is sometimes required to execute on behalf of the disabled subject.

4. Subjects have a substance abuse history (as diagnosed by hospital psychiatrist or reflected in patient social history).

5. A prediction that the subject will stay at the hospital for about eight weeks so that his participation in research can be completed. The units selected had subjects who were relatively long term care patients and whose average stay on these units was less that one year. Those subjects who were chronic schizophrenic and resided on those units for over one year were excluded from the study for two primary reasons. First, those who resided for more than one year, were generally long term chronic patients who have not been discharged from hospital for several years and did not have opportunity to use drugs on the outside. And secondly, these patients were more confused and uninterested in any treatment programming including drug abuse studies.

Distribution in three experimental groups was made on a random basis alphabetically (unit name versus treatment procedure matched alphabetically).
Control group comprised of subjects from other units due to a lack of subjects on
the unit that was selected for this group. There was also a loss of one subject
from control group which was filled with subject from another unit. The selection
criteria were explained to the unit nurses who screened the subjects on their
respective units and notified the researcher with names. The researcher met with
the subjects and offered informed consent (see appendix G) form that explained
the nature and purpose of study and also that participation is fully voluntary and
a subject can drop out of study anytime without any resulting consequences.
Subjects read the consent form themselves and were asked to verbalize back to
the researcher if they understood everything. This not only confirmed their
willingness or unwillingness to participate, but it also told the researcher if the
subjects could read and comprehend well enough and if they could meaningfully
participate and respond in research that demanded reading and writing skills.
Signed consent forms and data forms were kept in a locked area with the
researcher. The four groups were distributed as follows: (1) Control Group, (2)
Individual instruction, (3) Group instruction, and (4) Group and individual
instruction. Total study duration took ten weeks from the start till end of the
study; eight weeks for instructional sessions and two weeks for subject selection,
informed consent, group formation, and data collection. Table 2 is an outline of
the pre-post between group design depicting a measure of dependent variables
and the kind and duration of intervention for each specific group.

Control group did not receive any intervention, but all experimental groups
Table 2

Experimental Design

<table>
<thead>
<tr>
<th>Groups</th>
<th>Pretest Measure</th>
<th>Intervention</th>
<th>Posttest Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control (5 subjects)</td>
<td>Drug Knowledge</td>
<td>None</td>
<td>Drug Knowledge</td>
</tr>
<tr>
<td></td>
<td>Drug Attitude</td>
<td></td>
<td>Drug Attitude</td>
</tr>
<tr>
<td>Individual Instruction (5 subjects)</td>
<td>Drug Knowledge</td>
<td>45 m x 2/week x 8 wk (12 hr)</td>
<td>Drug Knowledge</td>
</tr>
<tr>
<td></td>
<td>Drug Attitude</td>
<td></td>
<td>Drug Attitude</td>
</tr>
<tr>
<td>Group Instruction (5 subjects)</td>
<td>Drug Knowledge</td>
<td>45 m x 2/week x 8 wk (12 hr)</td>
<td>Drug Knowledge</td>
</tr>
<tr>
<td></td>
<td>Drug Attitude</td>
<td></td>
<td>Drug Attitude</td>
</tr>
<tr>
<td>Individual and Group Instruction (5 subjects)</td>
<td>Drug Knowledge</td>
<td>30 m x 4/week x 6 wk (12 hr)</td>
<td>Drug Knowledge</td>
</tr>
<tr>
<td></td>
<td>Drug Attitude</td>
<td></td>
<td>Drug Attitude</td>
</tr>
</tbody>
</table>

received the same amount of instruction giving the researcher ability to compare the effectiveness of different instructional delivery systems in enhancing drug education and improving drug attitude in the dually diagnosed subjects.

Responses to the questionnaires were taken individually and in the presence of the researcher. Subjects did not have the opportunity to discuss with peers or staff during the survey. Subjects were instructed to answer questions only as asked and ask the researcher if they were unsure about meaning of a question or
of a word. Responses for both phases of the test were noted on a separate sheet of paper and tallied with the correct responses. The correct answers to the questions were checked from standard textbooks on substance abuse and rechecked with Psychology Department faculty member who specializes in drug abuse research. A bar graph is presented in the results chapter and details explained in the discussion chapter. There were no other substance abuse education provided by the units, so the subject response changes can only be attributed to the intervention itself. A few subjects (2 or 3) were attending Alcoholic Anonymous (AA) groups at the hospital once a week. Discussion at the AA were different and unrelated to the materials presented and tested in the study. For the subjects who attended AA meetings, an analysis follows their results in the discussion chapter. Statistical analysis of the data was done for Drug Knowledge (Part I) using the Analysis of Variance (ANOVA) procedure. This procedure was chosen due to the nature of the experimental design itself. For Drug Attitude (Part 2), number of shifts were noted for pre versus post intervention for all fourteen (14) items and a measurement made as to what direction the attitude shifted (shows proportion of subjects that showed attitude change and also of questions that they showed a change in).

Statistical Analysis

Knowledge score differences were computed for all four groups and also the scale was divided into four areas of interest of the drug abuser (downers, uppers,
all-arounders, and general) and it was determined as to what area was mostly affected in each respective group by intervention, and why. For Drug Attitude Scale, 14 questions were measured depending on whether they addressed a shift in the positive or negative direction. All odd numbered questions are against drugs, so "agree" would be the correct answer, hence positive attitude. All even numbered questions are for drugs, so "agree" would be the wrong answer, hence negative attitude. On the attitude scale, whenever a positive number is obtained as a difference between pre and post scores, this signifies an improvement in attitude. On the attitude scale, whenever a positive number is obtained as a difference between pre and post scores, this signifies an improvement in attitude. Part 2 was also categorized in relation to the question addressing the following areas: (a) health, (b) social, and (c) general/educational. ANOVA is also used for drug attitude scale enabling the researcher to determine if changes in the means in post test among the different categories of each group was a result of treatment intervention. Results of statistical analysis and discussion follows in the chapters ahead.
CHAPTER III

RESULTS

Analysis of Variance (ANOVA) procedure was used to test the hypothesis that all groups have the same mean. This method tests if there are any differences between the groups and whether the differences among two or more means are greater than would be expected by chance alone. In ANOVA, the null hypothesis is omnibus: \( H_0 = U_1 = U_2 = U_3 = U_j \). If the null hypothesis is true, the \( F \) statistics will be equal to 1.00 on the average. In our case the null hypothesis is that mean \( A = \) mean \( B = \) mean \( C = \) mean \( D \). The alternative hypothesis is that the means are not all equal. If there is difference between group means, there can be two possible sources of this variation: (1) The treatment methods, and, (2) Individual differences. However, because all factors were held constant, and no extraneous variables were operating on the groups, we will conclude that changes in group means, pre versus post, are a result of treatment interventions alone.

The Duncan's Multiple Range Test for each dependent variable was also performed. This procedure helps us to conclude: (a) whether method \( X \) is superior to both methods \( Y \) and \( Z \), or (b) which method (by its results) are or are not significantly different. All the obtained \( F \)'s are compared with critical \( F \) taken from the statistical tables. Significance level was kept standard at 0.05 level.

Figure 1 depicts the change of means between pre and post knowledge raw...
scores (Scale I) for each group. We can notice a nominal increase of 0.2 in control group post scores from pre scores. However, for experimental groups, the post test scores are substantially higher, suggesting that the treatment had positive impact in each case. The degree of change varied from group to group, suggesting the effectiveness of an individual instructional method. Figure 2 is simply a representation of score changes in percentage form. We can see that although for control group a positive change is seen by 0.4%, the experimental group show a change of 25.2%, 24%, and 28%, for individual instruction, group instruction,
Figure 2. Percentage Change of Knowledge Scores by Groups.

and individual-group instructional methods respectively. The knowledge score differences suggest an $F$ value of 11.50 at $P > F$ (corresponding probability of 0.0003. If $F$ value or obtained $F$ is sufficiently large (more than 1.00) as compared to $F$ critical, one can conclude with a chosen degree of confidence that the difference between the two or more groups was not due to sampling error or chance, but reflects a valid treatment effect (i.e., differences between population means). The Duncan Multiple Range Test further provides an analysis suggesting that the scores of control group are significantly different from scores of the
experimental group. This means that the control group in fact did not show significant change in post test. An explanation for changes in the group scores and its implications/meaning is described in Chapter IV.

For scale II or the attitude scores, Figure 3 suggests positive change in all experimental groups raw score means. However, there is a slight negative change in raw score mean for the control group from pre test to post test. The ANOVA shows an F value of 2.48 at a corresponding probability of 0.0981 indicating that the change in group means is not quite significant. The Duncan procedure also suggests that the means obtained in pre versus post test are not significantly different. Figure 4 which is a percentage representation of mean changes indicates a 5% decrease on post test for control group, and a 3%, 9%, and 6% increases for individual instruction, group instruction, and individual-group instruction subjects respectively. This finding is interesting when compared with the knowledge scores. What we find here is that although there are some changes in subjects attitudes from intervention, it is not anywhere near the changes brought about in the form of increased knowledge. In other words, significantly increased knowledge in substance abuse issues did not improve subject's attitude towards substance abuse to the same degree. The attitude scale is broken down into positive and negative attitudes and the researcher attempted to look at the differences in both areas as well. In the attitude scale, it may be noted that all even numbered questions require a "yes" answer, whereas all odd numbered questions require a "no" answer in order for the attitude to be positive. When a
positive number is obtained as a difference between pre and post test, it signifies an improvement in attitude. A negative difference then, shows that the intervention did not improve the attitude. ANOVA results indicate an $F$ value of 1.31 at $Pr > F 0.3068$ for Positive Attitude and $F$ value of 3.78 at $Pr > F 0.0318$ for Negative Attitude. Although for positive attitude, the mean difference is not significantly different for each group, for negative attitudes however; the control and individual instruction groups are significantly different than the other two experimental groups meaning that there is significant improvement shown for the
Figure 4. Percentage Change of Attitude Raw Scores.

The scores for both knowledge and attitude scales were analyzed further by a breakdown of the scales into separate categories. The knowledge scale tests primarily four areas of subject interest: "uppers", "downers", "all-arounders", and, "general". Figure 5 describes the raw mean score changes of "upper category" between pre test and post test. There are significant mean changes for all experimental groups, but mean decreased for the control group. F value is 13.09 at Pr > F 0.0001. The control group shows a knowledge decrease of 2 points by group...
average and the experimental groups all show knowledge increase by a group average of 3.8, 3.6, and 5.6 respectively for the individual instruction, group instruction, and individual-group instruction subjects. Figure 6 is a description of scores on "downers" category. The post test mean shows positive change, i.e., an increase in knowledge for all experimental groups. The $F$ value is 3.64 at a corresponding probability of 0.0355. Duncan grouping shows significant mean difference for individual instruction group, but not significant for other experimental groups; although there are still some positive changes. Control group
shows the same mean in post test. The knowledge increase in "downers" category by group average score went up to 3.0, 2.8, and 1.2 for individual instruction, group instruction, and individual-group instruction methods respectively. For the "all-arounders" category (Figure 7) that have 14 items in the scale, we see the same general increase for all experimental groups and a decrease in post test mean scores for the control group. Score increase is 4.2, 5.2, and 5.8 respectively, for the experimental groups. $F$ value is 5.27 at $Pr > F$ of 0.01. The Multiple Range Test also shows a significant change for individual instruction, group
instruction, and individual-group instruction procedures. For control group we see a negative change or knowledge decrease of 0.8. The last category in scale I is that of "general information" with 12 items. Figure 8 describes this category indicating that all experimental group exhibit an increase in the mean scores. $F$ value is 4.27 at $Pr > F$ 0.0214, meaning that the changes are significant and attributed to the intervention. The highest change is shown by individual instruction group with an average of 2.2. There is no change showed by the control group.

Figure 7. Mean Change of Knowledge Scores for "All-Arounders".
Looking at these four categories, we note that the highest degree of positive change in scores is brought about by the fourth intervention group which is individual-group method. A detailed discussion will follow on these findings in Chapter IV.

The Attitude Scale was also divided into three separate areas of attitudinal questions asked. These were related to "health", "social", and "general" areas. Figure 9 shows the group attitudes on "health" related issues. The control group shows a slight decrease in attitude of 0.04, but all experimental groups show an
improvement. The ANOVA for this category suggests an $F$ value of 3.25 at $P > F$ of 0.0497 indicating a general increase of positive attitude in post test. The Multiple Range Test tells us that a change for individual instruction group and group instruction groups are significant, but not for the control group or individual-group instruction. For the "social" attitudes in scale II, as shown in Figure 10, there is no attitude change for the control group or individual instruction group. However, there are changes of 1.6 and 0.4 in group instruction and individual-group instruction methods. The ANOVA shows an $F$ value of 3.46 at
Figure 10. Mean Change of Raw Scores in "Social Attitude".

Pr > F of 0.0414 suggesting an overall improvement of all groups related to treatment intervention. The changes in experimental groups are although significant, they are not significant among themselves. Figure 11 shows results on the "general" attitudinal questions regarding drugs. We see a 0.4 improvement for control group, but the Duncan Test says that the change in mean is not significantly different. The change in mean is also not significantly different for any of the experimental groups in this category did not increase at all. ANOVA indicates an F value of 1.54 at Pr > F of 0.2425.
Figure 11. Mean Change of Raw Scores in "General Attitude".
CHAPTER IV

DISCUSSION

The study was completed at a psychiatric hospital with dual diagnosis patients who carry a mental illness diagnosis with substance abuse or at least have a history of substance abuse given in their records. A referral for this study was made by unit shift supervisor after the subjects met the criteria for inclusion in the study. It was realized by the researcher that the hospital where the study was conducted is one of the many state facilities which does not provide formalized treatment or education in substance abuse area to its psychiatric patients. It was mentioned in the first chapter that there is an extreme lack of research providing therapeutic direction to the clinician in dealing with this population. What treatment approaches are available and which can be the most effective in bringing about knowledge increase and attitudinal changes in the dually diagnosed population? What kind of treatment program is most suitable? Although many other questions were raised in the introduction chapter, the researcher kept the study limited to address the questions mentioned above in order to appropriately deal with issues in a realistic manner. Several hypotheses that were formed include, (a) Drug education improves knowledge and attitude in inpatient psychiatric population, (b) Individual-group instruction is a more effective strategy than either approach alone in enhancing drug knowledge and improving attitude
toward drugs, and (c) Drug education brings about increased improvement for both knowledge and attitude. The issue of medication and drug interaction was considered to be beyond the scope of the present study given the topic of research, and so any effects of psychotropics on street drugs or vice versa is not studied. However, this remains an important area of investigation that needs to be explored in the future studies. In the present study, three experimental groups and one control group were formed with five subjects in each group. Educational materials were provided using individual instruction, group instruction, and individual-group instruction to the three experimental groups. Four male units were selected for study. Two primary reasons for not including female subjects were that there are fewer female patients in hospital, and that automatically decreases the chance of finding dually diagnosed female subjects who met the selection criteria. Also, it was assumed that more male patients have substance abuse problems than female patients, thus making more male subjects available for the study. Appendices B through F is a summary of the educational materials used and provided to the experimental groups based on the format recommended in the SPADA manual. Certain items that were not found or detailed in SPADA manual, but were asked in the questionnaires, were discussed in classes based on materials published by the National Institute of Mental Health and other educational institutions. Basic materials constituted of general information on drugs, theories of addiction, and the treatment process itself. "Therapy" came in when discussions focused on how to handle situations in which subjects were most likely
to return to substance abuse. Issues of general life stresses with and without substance abuse and adjustment/relationship issues were also discussed. More discussions took place in group rather than individual sessions. No intervention was provided to the control group. Subjects signed informed consent (Appendix G) before the start of study. Total study period lasted ten weeks, with interventions given for a total of eight week period. Pre and post intervention figures are presented in the previous chapter in order for the reader to readily get an idea of the progress made by the subject due to the intervention process. Statistical data proves that some kind of intervention was better than no intervention confirming the first hypothesis. Experimental groups showed different results due to the different strategies applied. This confirms the second hypothesis as proven by statistical outcome. In this chapter, each method will be discussed and an analysis will be made on individual gains both from researcher's perspective and from comments made by the subjects during and after the study. Looking at Figure 1, it can be noted that knowledge scores improved in post test for all four groups. For control group, mean scores in post test improved (although very slightly), mainly due to the contribution of subject RR who was generally very interested in substance abuse issues and would read, ask, and participate in learning activities on his own -- because he was a control group subject, no learning material was provided to him by the researcher. Knowledge scores dropped in post test for 3 subjects by an average of about 3 points in the control group. A decrease in scores in post test can be attributed to lack of motivation,
carelessness, and mainly, lack of education. It can be derived that with no treatment in a given area, a patient's drug abuse behavior and attitude can deteriorate over time.

**Specific Discussion Groupwise (Part 1)**

The three experimental groups all show a very high increase in knowledge scores. It can be concluded by looking at Figures 1 or 2, that individual-group instruction was most effective in improving the scores compared to either individual instruction alone or group instruction alone. However, group instruction resulted in higher post test scores than individual instruction, meaning that group instruction is more effective compared to individual instruction. The reasons for this could be increased motivation from peer pressure, learning opportunity from each other in the group, and an openness in discussing issues with others, knowing that others have similar problems. For control group, post test scores are minimally higher than pre test scores and so a post test increase is not considered significant compared to the experimental groups. Figure 2 is a depiction of knowledge raw scores (percentage wise) and thus resembles Figure 1. In the individual instruction group, generally all subjects show an increase of about 10 points in post test except JC who remained uncooperative for most of the latter part of the study and had refused to complete the post test questionnaire at first attempt. He missed 3 or 4 therapy sessions and upon request completed post test questionnaires in two different sittings. We do not see any change in his score from pre
test to post test. We can then say that intervention did not affect his knowledge. But looking at his deterioration in other areas (self-care skills, thought disorder, noncompliance) due to active psychosis, we can say that he maintained his knowledge in substance abuse area because of intervention only. Had JC been very cooperative throughout the study period, probably his success would not have improved very much as he is known to his researcher as a patient with fixed attitude about drugs and who would show little trust in staff about anything. A longer intervention period may have improved his condition more. All other subjects in individual instruction group showed a significant increase with a minimum of 9 points and maximum of 23 points. The subjects showing most improvement took an active part in learning by utilizing reading materials in extra time for their education. It is interesting however that subject BN showed an improvement of 22 points in post test, however; on the attitude scale a change of only 1 point. This suggests that improved knowledge does not automatically result in attitude improvement of same degree. Why this is so will be discussed later in this chapter after we have looked at the profile of all the subjects. For group instruction method, 2 subjects show above average progress. Subject JB improved in post test by 18 points and subject CL improved by 16 points. Both these subjects had shown great interest not only in the topic of substance abuse, but in changing their habit and quitting forever. JB would especially seek more materials from the researcher and read them in his spare time. CL stated that he has already quit the habit but wants to know more "facts". Although JB show a
5 point increase in positive attitude in the post test, CL shows no increase or decrease in his attitude. TC showed 1 point increase in negative attitude although there is an improvement in post test knowledge scores. The cases of improving negative attitudes are less compared to increase in positive attitude after completion of the study. It seems that some subjects despite knowing the hazards of drug abuse may still use it for the same reason they started it. A discussion on this follows in the pages ahead. For the individual-group instruction method, we see a more consistent change for all subjects, i.e., all subjects remain closer to their mean scores in both pre test and post test situation. There is an average improvement of 14 points in post test mean scores with all subjects making improvements in knowledge scores and all subjects showing a positive attitude change for scale 2 in post test. Consequently, individual-group instruction is considered the most effective strategy for bringing about increased knowledge and positive attitude change for the most number of subjects.

By looking at the overall picture for scale I, we see that scores for control group changed by 0.2, which for practical reasons is not a significant change. For the experimental groups, we see an almost similar improvement in knowledge scores using individual instruction or group instruction 12 to 12.4 respectively. However, combining individual and group instructions gave the best results, yielding a total increase of 14 points in post test. This clearly indicates that a combination of individual-group instruction is superior to using either one alone.

Although it was not the original intention to breakdown the knowledge scale
into four groups, that was done while carrying a data analysis of the control and experimental groups. Figures 5, 6, 7, and 8, clearly point out that mean scores went up in all categories for the experimental groups in the post test. The scores for control group did not go up in any of the 4 categories. However, it did go down in 2 categories and remained the same in 2 categories. The subject who scored highest in control group in both pre and post test automatically shows greater knowledge in all four areas compared to the other subjects in the control group. The mean scores in category 4/Figure 8 ("general") goes up at least in post test for all experimental groups and stays the same for the control group. The questions in this category were more difficult to answer because the answers were very close to each other. In other words, there may be more than one "right" answer, but there is only one which is accurate. The researcher noted subjects taking more time in answering "general" questions. Post-test scores also show lowest average for this category. The subjects belonged almost equally to the three categories (with 2 extra subjects in the "all-arounders" category). Highest post-test scores are reflected for "all-arounders", meaning that the subjects apparently learned the most about this category. There was a consensus among subjects that there is a lack of information on "all-arounders", although more number of subjects had used this kind of drug than any other. The pre-test scores are highest for "downers" and lowest for the "uppers". This could mean that this population uses more "downers" since their knowledge on this category before intervention was the highest among all others. This however, is an extreme
generalization because the total number of subjects is quite low. It can be stated however, that, once intervention was provided, subjects learned and retained information as reflected by post-test increase for all experimental groups.

Specific Discussion Groupwise (Part 2)

Looking at Figures 3 and 4, it can be stated that although the control group made a slight negative change in attitude in post test scores, all the experimental groups showed a definite improvement in attitude after intervention. Largest change in attitude seem to be a result of group instruction the most. It seems that the subjects attitude were affected by what their peers thought and stated about drugs during the group discussions and also exchanging views and concerns seemed to affect their attitude. Subjects had no opportunity for hearing other's opinion in individual instructions and lesser time and opportunity for such during individual-group instruction. Subjects showed more interest in individual-group instruction and whatever was learned in individual sessions was also shared with the group. Subjects respected each other's opinions and felt free to correct others by giving reference to materials on any given topic. In individual sessions, subjects would tend to bring up issues discussed in groups and ask the researcher for his input. A breakdown of attitude scale shows that positive change is a slight negative change in the "general" area for all experimental groups. The general area questions are also controversial and confusing and thus harder to answer. It may also be derived from this finding that an increase in drug knowledge does
not necessarily improve a person's attitude towards its use. One recommendation that could be made in this regard is to continue educating the patients on a continuing basis hoping that it will further change their attitude as evident by this study. It is interesting to note that although subjects did say negative things about drugs during discussions in the instructional sessions, but still the post test shows no gain in attitude in the "general" category. Could this be a symptom of "treatment resistance?" This term is generally used for chronic mentally ill patients who may verbalize need for change, but it is not reflected in their behavior despite ongoing treatment.

Certain comments from subjects that seemed interesting to the researcher were noted during the initial and ending phase of the study (subjects initials are used to identify their comments):

CL: "Drugs are courage makers, e.g., I could climb mountains on a motorbike when I am taking speed". "I am dried, but still have anxiety to do it".

JK: "I am turning into heaven by doing drugs". "You don't need sex while on cocaine...you have sex with cocaine, including orgasm". "Cocaine is like a woman you have sex with".

BN: "I will still do drugs even though I know all its dangers...I'll do it just for the buzz".

DM: "I believe its in your genes, I can't quit".

WC: "On acid the feeling is like a million volts of electricity...the high is a great feeling".

BT: "It's not okay to use but I might given the opportunity".

JB: "If I celebrate Lord, that's marijuana, if I celebrate Christ, that's cocaine".
TC: "Psychotropic drugs wipe out the effect of street drugs".

DM: "I took acid and was chasing cars all day."

JC: "Pot should be made legal".

WC: "I believe in speed as a religion...it motivates people". "It helps you keep away from suicide..., it’s an upper". "All psychiatrists and mental health professionals should experience drugs to see its effects for themselves". "You can’t do drug education if you haven’t used drugs yourself".

It is important to note that the above statements reflect ignorance and negative attitude about harmful effects of drugs. WC showed slight improvement in post test scores but JC showed no improvement at all (he also did not show any decrease of scores although he was affected by active psychosis during the end phase of the study). These two subjects consistently believed that drugs are "good" for everyone and should be made accessible freely and with no resulting legal consequences. A couple other subjects continued to believe that even though the study has improved their knowledge and attitude, they may get hooked on drug given the opportunity, i.e., discharge from hospital, availability of money or certain friends who can provide drugs for free or as a favor. Let us review some direct statements from subjects during the latter part of the study or written as comments on the questionnaires on post test.

CL: "This treatment has helped me to get to know myself better...I want to know more about all this, so I don’t fall back in drug abuse".

JK: "Treatment sticks with the rest of your life...after you have been through this, you can deal with most of your problems with drugs". (JK went to several other substance abuse programs, and he made a general statement for all treatment programs).
CL: "AA groups talk more about higher force and religion, which is not useful...these discussions are more realistic and raises your self-determination (to quit)."

DM: "I got a lot out of classes and these tests you gave me...they really need the classes here bad". "You can't just sit there and daydream, so you should participate actively and try to learn".

TY: "You gave me a lot of info...it warns you about staying away from it". "I would recommend other drug abusers to attend you classes".

BT: "I agree with them strongly...have learned a lot of hazardous stuff. I don't think I am going to use it after this class". "I will also go to AA and NA after discharge from hospital".

JK: "It's more dangerous for younger people than older, because older people know their limits...I would say, stay away from it (TM is a 21 year old schizophrenic male with a childhood history of drug abuse and hospitalization for mental illness).

DM: "If you're working in a factory or operating a machine, you could endanger self or others".

MW: "I don't mind doing drugs, but I won't encourage others, because I don't want others to go through what I have gone through: like psychotic behaviors, suicidal attempts, being in a mental hospital, etc. "If I was given a new life again, I wouldn't start on drugs".

BT: "Most of 'em chemicals are not made to put in your system...if you take any drug, it should be prescribed by a doctor".

It was stated in the first chapter that substance abuse serves at least three basic purposes according to Segal (1988). In the present research, most subjects indicated that their habit was a result of peer pressure or "trying to be one among them". About one-half subjects said they did it for excitement and no one said that they did it to overcome unwanted feelings. The findings of Segal of course, is not for psychiatric patients. But interestingly enough, the subjects said that
they first did drugs for other reasons and then that resulted in mental illness, which then resulted in taking more drugs to overcome unwanted feelings. For these subjects the stimulating experience and peer influence was the main reason they did drugs. However, doing drugs from peer pressure can also be indicative that a person wants to get over his unwanted feelings by giving in what his peers are doing. There was a general consensus among experimental groups that drugs are harmful and should be avoided but at least one subject said he would still do it given the opportunity, and a couple other subjects said they might still do it given the opportunity. It was also mentioned in the first chapter that whatever knowledge or attitude a psychiatric patient carries regarding substance abuse, his stay at the hospital is not affected by that alone. If a patient is stable enough, i.e., not dangerous to self or others and is able to carry out self-care needs independently, and is compliant to unit rules, he is then generally discharged from the hospital. Substance abuse issues are left unaddressed and unattended. The patient may leave hospital and get back in the habit and then as a result of drug effects may be admitted back in the hospital for "psychiatric symptoms". One practical problem is that according to the State of Michigan regulations, only "Certified Drug Counselors" can provide "therapy" to persons with substance abuse problems. The state facility where this research was done does not have drug counselors because there are no substance abuse programs because it is not a substance abuse facility. The approval for developing such programs and funding, etc., are done by authorities at the State level and this issue should be
addressed at that level. Involving psychiatric patients and their advocates may play an important influence in changing the philosophy and policies at the government level. The staff at the unit level as well as administrators also need to be educated on the special problems of the dually diagnosed. How does substance abuse complicates diagnosis and treatment should be discussed in treatment teams of those patients. Hospital wide inservices would also be beneficial for staff in general. How does substance abuse contributes to relapse? This is an issue that staff working in community mental health centers should be most concerned about in order to prevent hospitalization for patients who are admitted for "psychiatric symptoms" as a result of drug abuse. The focus of this study is comparing the treatment modalities and we saw earlier that individual-group instruction is most beneficial form of education we can provide to this population. Obviously, where there is only one dually diagnosed patient, no group instruction can be made available on that unit, but a hospital wide educational program can be developed where individual patients receive services individually on their units by their psychologists for instance, and in group by the specialist on substance abuse who can see the patients from all units in one common pool where the referrals can be made from all hospital units. Such a person or specialist can be a certified drug counselor whose services will immensely benefit the patient. For subjects seen individually, one benefit that stands out significantly is the time the subject may get from the therapist. Specialized needs may be addressed by means of biofeedback, stress management, behavior therapy, behavior modification, etc.
These services are generally always available at state facilities usually through Psychology Department, although it is only a matter of coordinating the services for these patients.

It needs to be mentioned that even several months after the study was completed, certain subjects as well as professional staff on various hospital units kept asking if substance abuse groups will be started again. There seems to be a general agreement on hospital units that education in the area of drug abuse is especially important for psychiatric population because it is not commonly offered. In the knowledge of this researcher as well as many other hospital workers, there are no organized substance abuse programs for the mentally ill in state hospitals or very rarely in the community. There are however specialized drug abuse programs that are not geared toward psychiatric population.

General Clinical Recommendations

Another issue brought up and discussed in the first chapter related to the availability of treatment approaches. Several treatment approaches were discussed, but now we should answer as to what approach is best suited for mentally ill clients. No one approach is the best approach; it is however important to acknowledge that the best use should be made out of whatever services are available in hospital. Also, we discussed above that in a state hospital none of the above services are available in a systematic order or in a formalized way. For the kind of treatment provided in this research, it does not take a specialist to do it.
Any willing staff who can organize groups of substance abuse patients can run such educational sessions. We find several things via this study: (a) education given to the substance abuse inpatient psychiatric subject enhances their knowledge and improves their attitude about drug abuse, (b) subjects show significant improvement in areas specific to their interest in drug abuse, (c) individual-group instruction is more effective in bringing positive changes in psychiatric inpatients rather than individual or group instruction provided alone. These findings confirm all three hypothesis formed in the study. Furthermore, it was found that improved knowledge does not automatically result in improved attitude, and it was also derived that with no intervention for a dually diagnosed patient, the substance abuse behavior and attitude can deteriorate over time. The issue of attitude and behavior is an interesting one. The investigations in this area formerly constituted the bulk of research in social psychology (Eagly and Himmelfarb, 1978). Many studies have found a low correlation between people's expressed attitudes and their actual observed behavior.

Looking back at the questions posed in the first chapter about whether these patients should be treated in substance abuse program, a psychiatric unit, or some combination of the two, it can be stated that given the hassle and shuttling forth between the hospital and community agencies, it is better for the hospitals to have separate units for dually diagnosed patients. These units can be specialized in the diagnosis and treatment of the patients and discharge of patients only when the problems of mental illness and substance abuse have been dealt with. There
may or may not be substance abuse counselors doing treatment on substance abuse units. If separate units cannot be started, at least there should be specialized treatment services for the dually diagnosed similar to the program carried out in this study. This will address many issues including correct diagnosis, treatment, discharge and most importantly, maintaining a successful stay in community and prevention of future psychiatric hospitalizations. The approach and materials tried by the researcher can be done by most mental health staff who have an inclination and desire to work with this population. Unfortunately, most families of these hospitalized patients have very little to do with treatment aspects. It was noted that the patient advocacy group people would come to the units and discuss the progress or problems with each individual patient. It seems then, that it is more beneficial to involve hospital staff and some concerned groups in developing such programs rather than counting on patient family for input. Some families who are involved in the treatment process can prove helpful in contributing to the development of innovative programs. In the community, there are group homes or residential treatment centers for the mentally ill who are discharged from psychiatric hospitals. However, there is also a need for dual diagnosis homes for those subjects who qualify for community living by meeting hospital criteria for discharge. These homes may in turn continue to provide education and institute rules with regards to substance abuse issues. A supportive family type of environment is needed rather than punitive-consequating type. This type of set up will not result in a misdiagnosis or ill diagnosis of patient by
someone who does not know the complete background on the patient. It will also prove helpful for the doctor in prescribing medication that will not interact with certain drugs or alcohol that a prospective patient may have abused. An outpatient treatment by the hospital also remains a possibility.

Implications for Future Research

There were several treatment approaches mentioned in the first chapter that can be modified and tailored for a particular individual or group of subjects given the nature of their problem. Behavior therapies and psychotherapies have been successfully used in treating the substance abuse patients, although not necessarily patients with dual diagnosis residing in inpatient setting. This area of dual diagnosis is a very wide open subject ready for researchers to explore and make studies. Psychotherapy and behavioral techniques are considered skills of a "psychologist" and professionals in substance abuse do not necessarily get this training. Also, not all psychologists are skilled in the use of biofeedback, relaxation techniques, assertiveness skills training, etc., that may prove helpful in working with substance abuse patients. Both psychotherapy and behavioral techniques can address the important issues like, how to handle situations in which a person is most likely to return to substances. Not only we should look at developing a program at hospital or clinical setting, we must seriously consider an appropriate training of those who will be working with the dually diagnosed population. What training is needed for the staff who will educate or treat the
dually diagnosed? These questions must be addressed in the future studies.

Improving the Present Study

Two things that may have substantially improved the value of the present study were (1) more subjects in each group, and (2) longer study period. As mentioned earlier in the method chapter, it was hard to find larger number of subjects due to harder selection criteria. Also, extended research time was not possible because patients are transferred from one unit to another for various reasons (including ward rearrangements or discharges from hospital) that may have caused disruption in the experimental groups, and to work with subjects who stayed in the hospital longer due to "psychotic episodes" may have proven less fruitful because of their minimal involvement in the study. It would also help to develop a questionnaire aimed at assessing the special needs of this population. The area of research in this specialty is in its infancy, and as studies are completed and findings made, more appropriate recommendations and treatment methods will follow.
Appendix A

Approval Letter for Using the Pennsylvania State University Drug Education Evaluation Scales
November 3, 1993

Amber Haque
Psychologist
Kalamazoo Regional Psychiatric Hospital
Kalamazoo, MI 49008

Dear Mr. Haque:

You have our permission to use the PSU Drug Education Evaluation Scales in the appendices of your dissertation. We are also granting permission for University Microfilming International to supply copies of the scales upon request.

Sincerely,

[Signature]

John D. Swisher
Professor of Education
Appendix B

The Pennsylvania State University Drug
Drug Education Evaluation Scales,
Parts 1 and 2

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THE PENNSYLVANIA STATE UNIVERSITY DRUG EDUCATION EVALUATION SCALE

Part One: Drug Knowledge Scale

Developed by John Swisher, Ph.D. and John Horan, Ph.D.

DIRECTIONS: Please indicate by circling the letter that most accurately answers the question, or is typical of your opinion. It is not expected that you will know all the answers but since there is no penalty for guessing please attempt to answer everything. Because all your answers are confidential, it is our hope that you will answer these questions honestly.

1. Which of the following is not a name for marijuana:
   a. cannabis
   b. grass
   c. joint
   d. pan
   e. reefer

2. LSD can be detected by:
   a. its smell
   b. its taste
   c. its color
   d. its size
   e. none of the above

3. Amphetamines are:
   a. stimulants
   b. depressants
   c. physically addicting
   d. narcotics
4. Which of the following is not a tranquilizer:
   a. thorazine          c. methadrine
   b. compazine          d. stelazine

5. Codeine is used medically to:
   a. help people relax   c. help people sleep
   b. help relieve pain   d. help people become alert

6. A person who uses marijuana a lot may:
   a. become addicted
   b. use more in order to feel the effects
   c. think he can’t get along without it
   d. try heroin

7. Some research with white blood cells tends to indicate that LSD:
   a. dissolves chromosomes
   b. destroys vision
   c. causes chromosomal mutations
   d. causes chromosomes to break

8. Which of the following is not a stimulant:
   a. benzedrine          c. reserpine
   b. methedrine          d. amphetamine

9. The term "speed" refers to:
   a. barbiturates        d. LSD
   b. amphetamines        e. narcotics
   c. marijuana
10. A drug user who increased the amount of a drug in order to obtain the same effect is developing a (an):

   a. physical dependence  c. addiction
   b. tolerance            d. psychological dependence

11. Hashish is a (an):

   a. concentrated form of opium
   b. amphetamine
   c. concentrated form of marijuana
   d. physically addicting drug

12. LSD is sometimes referred to as:

   a. pot                   c. speed
   b. cube                  d. zap

13. Amphetamines are sometimes called:

   a. red-devils            c. yellow-jackets
   b. goof-balls            d. pep pills

14. Barbiturates are sometimes called:

   a. pep-pills              c. truck drivers
   b. goof-balls             d. hard stuff

15. Marijuana grows in the climate of:

   a. Africa                c. Northeastern
   b. South America          d. all of the above

16. Peyote is a(n):

   a. mushroom              c. root
   b. small cactus          d. herb
17. Extensive use of barbiturates may cause:
   a. needing more to feel the effects
   b. a feeling that you can’t get along without it
   c. physical addiction
   d. all of the above

18. The effects of a drug on a person are a result of:
   a. previous experience with the drug
   b. the amount of drug taken
   c. the person’s unique personality
   d. all of the above

19. Which of the following is non-addicting:
   a. codeine
   b. barbiturates
   c. marijuana
   d. heroin

20. Benzedrine and dexedrine are:
   a. depressants
   b. amphetamines
   c. narcotics
   d. barbiturates

21. Barbiturates are:
   a. Stimulants
   b. depressants
   c. non-addicting
   d. available without prescription

22. The fastest way to feel the effects of marijuana is by:
   a. smoking it in a cigarette
   b. inhalation of fumes
c. eating it in a capsule
d. injecting it in a blood vessel

23. LSD can cause:
   a. blindness
   b. deafness
c. hallucinations
d. all of the above

24. Which of the following has the least potential for psychological dependence:
   a. cannabis
   b. dexedrine
c. doriden
d. alcohol

25. Which of the following is not a long-term effect of narcotic use:
   a. loss of appetite and weight
   b. impotence
   c. sterility
d. high blood pressure

26. Which is the most powerful of the hallucinogens:
   a. peyote
   b. marijuana
c. LSD
d. mescaline

27. Continual use of amphetamine can lead to:
   a. physical dependence
   b. tolerance
c. psychological dependence
d. all of the above are possible outcomes of continual use

28. Which of the following drugs has the highest rate upon withdrawal from physical dependence:
   a. heroin
   b. amphetamines
c. barbiturates
d. cocaine
29. Demerol is a(n):
   a. artificial narcotic
   b. stimulant for low blood pressure
   c. mild tranquilizer
   d. ingredient in many cough medicines

30. One effect that marijuana does not result in:
   a. decreased appetite  c. change of perception
   b. feeling of elation  d. impairment of judgement and coordination

31. Use of LSD does not result in:
   a. a psychotic episode  c. increased intelligence
   b. "flashbacks"  d. severe anxiety reactions

32. Which of the following would be most dangerous to consume while barbiturates are in one's system:
   a. marijuana  c. alcohol
   b. amphetamines  d. LSD

33. Tincture of opium is medically used for:
   a. stomach upset  c. increasing activity level
   b. depressed persons  d. it is never used medically

34. The effects of marijuana are most similar to:
   a. heroin  c. morphine
   b. amphetamines  d. LSD

35. Which of the following is not considered to be an hallucinogen:
   a. marijuana  c. DMT
   b. LSD  d. SDC
36. Which of the following is least likely to cause death upon use or an overdose:
   a. heroin  
   b. barbiturates  
   c. amphetamine  
   d. morphine

37. Under the federal law barbiturates are classified as follows:
   a. high potential for abuse, some medical use  
   b. high potential for abuse, no medical use  
   c. dangerous drug  
   d. narcotics

38. Which of the following does not produce physical dependence:
   a. morphine  
   b. cocaine  
   c. codeine  
   d. heroin

39. Heroin is typically:
   a. smoked  
   b. eaten  
   c. injected into a vein  
   d. injected into an artery

40. Marijuana is legally classified by the federal government in the following way:
   a. high potential for abuse, some medical use  
   b. high potential for abuse, no medical use  
   c. hallucinogen  
   d. narcotic

41. Medically speaking LSD is called an hallucinogen but legally speaking it is referred to as follows:
   a. high potential for abuse, no medical use  
   b. opiate
c. high potential for abuse, some medical use

d. depressant

42. Three common gastrointestinal disturbances caused or aggravated by alcohol are:

a. diarrhea          d. duodenal
b. heartburn         e. a, b, and c

c. ulcers

43. What happens when barbiturates or some tranquilizers and alcohol are taken together:

a. the effects of both are cancelled

b. vomiting results

c. they have a multiplying effect greatly increasing the chances of overdosing and death

d. only the alcohol has an effect

44. Black out the correct items:

a. alcohol usually does not increase sexual performance

b. alcohol does not warm the body

c. coffee sobers a drinker to some degree

d. mixing drinks of the same alcoholic content leads to a greater degree of intoxication

45. Black out the items that are usually considered symptoms of alcoholism:

a. drinking to an excess at least once each week

b. going on the wagon

c. carefully maintaining a supply
d. alcohol induced blackouts

e. all of the above

46. The correct definition is:

a. delirium tremens: hallucinations and convulsions that occur during severe alcohol intoxication

b. blood alcohol concentration (BAC): the amount of alcohol that causes intoxication

c. antabuse: a drug that discourages drinking by causing a severe sick reaction when the antabuse user drinks alcohol

47. On the average, the rate of alcohol metabolism is:

a. 1/6-1/4 ounce of absolute alcohol per hour (1/2 drink per hour)

b. 1/1-1/1 ounce of absolute alcohol per hour (3 drinks per hour)

c. 2/3-1 ounce of absolute alcohol per hour (2 drinks per hour)

d. 1/3-1/2 ounce of absolute alcohol per hour (1 drink per hour)

48. The disease or condition associated with long-term, heavy use of alcohol is:

a. fatty liver

b. paralysis

c. cirrhosis

49. Alcohol can involve both a physical and psychological dependence:

a. true

b. false

50. Drug abuse can affect social relationships:

a. true

b. false
THE PENNSYLVANIA STATE UNIVERSITY DRUG
EDUCATION EVALUATION SCALE

Part Two: Drug Attitude Scale

Developed by John Horan, Ph.D. and John Swisher, Ph.D.

DIRECTIONS: Please indicate by circling the letter that most accurately answers the question, or is typical of your opinion. It is not expected that you will know all the answers, but since there is no penalty for guessing please attempt to answer everything. Because all your answers are confidential, it is our hope that you will answer these questions honestly.

1. Drugs are basically an unnatural way to enjoy life.
   a. strongly agree  d. disagree
   b. agree  e. strongly disagree
   c. have no opinion

2. I see nothing wrong with taking an LSD trip.
   a. strongly agree  d. disagree
   b. agree  e. strongly disagree
   c. have no opinion

3. I'd have to be pretty sick before I'd take any drug including an aspirin.
   a. strongly agree  d. disagree
   b. agree  e. strongly disagree
   c. have no opinion
4. Teachers ought to encourage their students to experiment with drugs.
   a. strongly agree  d. disagree
   b. agree  e. strongly disagree
   c. have no opinion

5. Pep pills are a stupid way of keeping alert when there's important work to be done.
   a. strongly agree  d. disagree
   b. agree  e. strongly disagree
   c. have no opinion

6. I wish I could get a hold of some pills to calm me down whenever I get "up tight".
   a. strongly agree  d. disagree
   b. agree  e. strongly disagree
   c. have no opinion

7. Students should be told about the harmful side effects of certain drugs.
   a. strongly agree  d. disagree
   b. agree  e. strongly disagree
   c. have no opinion

8. All drugs should be made legal and freely available.
   a. strongly agree  d. disagree
   b. agree  e. strongly disagree
   c. have no opinion
9. Even if my best friend gave me some hash, I probably wouldn't use it.
   a. strongly agree   d. disagree
   b. agree           e. strongly disagree
   c. have no opinion

10. In spite of what the establishment says, the drug scene is really "where it's at".
    a. strongly agree   d. disagree
    b. agree           e. strongly disagree
    c. have no opinion

11. As a general rule of thumb, most drugs are dangerous and should be used only with medical authorization.
    a. strongly agree   d. disagree
    b. agree           e. strongly disagree
    c. have no opinion

12. I admire people who like to get stoned.
    a. strongly agree   d. disagree
    b. agree           e. strongly disagree
    c. have no opinion

13. Taking any kind of dope is a pretty dumb idea.
    a. strongly agree   d. disagree
    b. agree           e. strongly disagree
    c. have no opinion
14. I would welcome the opportunity to get high on drugs.

a. strongly agree  
d. disagree

b. agree  
e. strongly disagree

c. have no opinion
Appendix C

Approval Letter for Using SPADA Materials in the Appendices
November 2, 1993

Amber Haque
7521 St. George Circle
Kalamazoo, Michigan 49002

Dear Amber:

You have our approval for using part of our SPADA manual in your appendices of your dissertation.

I am glad that our manual was of use to you in your research.

Sincerely,

C. Dennis Simpson, Ed.D.
Professor
Appendix D

General Information on Psychoactive Drugs
General Information on Psychoactive Drugs

<table>
<thead>
<tr>
<th>Depressants:</th>
<th>Sedative Hypnotics</th>
<th>Narcotics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>Opium</td>
<td></td>
</tr>
<tr>
<td>Barbiturates</td>
<td>Morphine</td>
<td></td>
</tr>
<tr>
<td>Heroin</td>
<td>Codeine</td>
<td></td>
</tr>
<tr>
<td>Other (anti-depressant drugs, antianxiety drugs, muscle relaxants).</td>
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**Stimulants:** Caffeine, Cocaine Amphetamines.

**Psychedelics:** LSD, PCP, Mescaline, Psylocybin.

**Marijuana:** Pot, Hashish, Liquid "Hash", Oil.

**Magnitude of Effects.**

**Duration of Effects.**

**Routes of Administration.**

**Types of Effects:** Physical and psychological.

**Short Term Effects.**

**Long Term Effects.**

**Reliability Issue.**

**Drug Interactions.**

**Effects on Pregnancy.**
Appendix E

Description of Drug Types
Description of Drug Types

Sedative Hypnotics

Route of Administration - In non-medical use, usually taken orally.

Duration of Effects - Short term, long term.

Drugs Used in Treatment.

Alcohol

Route of Administration - orally.

Duration of Effects - Short term, long term.

Drugs Used in Treatment.

Stimulants - Amphetamines

Route of Administration - orally, or are injected.

Duration of Effects - one half of amphetamine goes in blood stream, and one half is eliminated. Generally, effect is 4 to 8 hours. Short term, long term.

Drugs Used in Treatment.

Narcotics

Route of Administration - all four routes.

Duration of Effects - depends on route taken, amount of dose and tolerance of user. Short term, long term.

Drugs Used in Treatment - methadone, LAAM, Narcotic Antagonist. Methadone (a synthetic narcotic) used to treat those with physical dependence. The client functions in a more normal way. There are no withdrawal symptoms from heroin when methadone is used. Treatment consists of 21 days. If it is longer, it is called methadone maintenance. It eliminates craving for drug.
Psychedelics

Changes user's perception of reality. Gives hallucinations. LSD - pills, capsules, etc.
Mescaline - found in crown of peyote cactus.
Psilocybin - found in some variety of mushrooms.
PCP.

Route of Administration.

Duration of Effects - Short term, long term.

Drugs Used in Treatment.

Marijuana/Cannabis

Route of Administration - smoked or taken orally.

Duration of Effects - Short term, long term.
Appendix F

Theories of Addiction
Theories of Addiction

Theories help you think about client's problems in a structured way. Each theory of why a person becomes addicted suggests a means of treating the addiction.

Three general categories of theories:

A. Psychological theories - suggests that addiction results from the way a person feels, thinks, or solves a problem. There are emotional reasons why someone abuses drugs, for example, excessive guilt, or poor self-esteem. It may provide "escape" who feel they cannot cope with life. Behaviorally speaking, it is a learned habit which is reinforced. The client may know that the abusive behavior is hurting him, but the psychological relief is more important than any consequences (social, medical, or environmental). The treatment is to provide necessary therapies addressing psychological problems and substance abuse.

B. Socio-cultural theories - suggests that substance abuse is a result of external social pressure which encourage emotionally healthy persons to use and abuse drugs. Treatment consists of asking the client to redefine their social/cultural relationships. Weigh benefits versus risks.

C. Physiological theories - evidence is there that people who are addicted (especially to alcohol) are physically different than others who are not. They differ in respect to the rate at which they become physically addicted to substances. Some people can stop using alcohol while others cannot. Addiction to alcohol appears genetic, although that is not the only factor. Drug abusers are shown biochemically different.
than non-users. The medical model does not blame the person anymore than someone with appendices or arthiritis. Treatment consists of external support system including self-help groups, family and religious affiliations. An alcoholic must abstain from all alcohol in order to remain well (because alcoholics are presumed to have physiological characteristic which decreases their ability to engage in controlled drinking).
Appendix G

Description of Treatment Process
Description of Treatment Process

Goals of The Treatment Process

Drug abusers may be categorized into three general types:

1. Those who want help for their abuse.

2. Those who deny any drug problem and are sent to treatment unwillingly because others think the person needs help.

3. Drug free persons who need help to help their significant others who have drug problems.

The therapist's role is to accurately evaluate his options and progress. The most obvious goal is to eliminate the "destructive" use of drug. The first consideration is whether the clients' drug use is primary or secondary problem. When drug abuse is the primary problem, and it is successfully addressed, the client will be able to function normally. Mentally ill persons becoming addicted to and abusing drugs have secondary problems. Solving drug problem will not result in their normal functioning in the society.

General Considerations Regarding Different Types of Abusers:

Alcoholism: At later or advanced stages in alcoholism, patient may require detoxification. Then also they may still have associated medical problems and may take months to recover. Then other strategies are necessary to bring sobriety.

Narcotics Addiction: Common goals include:

(a) Stabilizing client on a long-acting, non sedating substitute (methadone).

(b) Substitute healthy daily pursuits/activities.
(c) Detoxify client from narcotic substitute (methadone).

(d) Stabilize in a drug free life style.

**Self Medication:** Identify the self medicating purpose of drug, i.e., to help client improve level of functioning, increase sleep, lose weight. After reasons for medications are identified, help the client resolve stresses, redefine goals that develop healthier coping skills.

**Discussion of General Goals Regarding:**

Medical and legal help, psychological problems, living arrangements, and social support systems.
Appendix H

Patient Education Handout, Hazards of Substance Abuse Transparencies
Patient Education Handout

Hazards of Substance Abuse

There are many hazards for the person with mental illness who abuses substances such as alcohol, illegal drugs, nicotine, or caffeine. These substances are often abused because of their power to make the person feel better temporarily.

**ALCOHOL**

Alcohol usually comes in the form of beer, wine, hard liquor, and over-the-counter medicines. The physical and mental effects of alcohol are intoxication, slurred speech, incoordination, and poor reaction time. Its power to relax causes it to be widely used. Long term use of alcohol can cause dependence, withdrawal symptoms, delirium tremens, cirrhosis of the liver, heart damage, stomach problems, bleeding, and feminization in men. Brain damage in cognitive difficulties such as memory impairment, incoordination, and other mental deficits, as well as death or injury from accidents, suicide, or homicide are other risks.

**ILLEGAL DRUGS**

Illegal drugs are commonly abused for their power to change mood, making the person feel better temporarily.

**Marijuana**

Also known as "pot", "grass", "weed", and "joint", marijuana produces physical and mental effects, including memory impairment, poor judgement, perceptual
distortions, increases in heart rate and blood pressure, anxiety, and paranoia. When used long term, it can cause cancer; amotivation; and reproductive problems (mainly infertility).

**Hallucinogens**

This group includes LSD; PCP; MDA; peyote; and mescaline. Hallucinogens are taken in pill form, ingested as mushrooms, or injected. Physical and mental effects include altered perceptions/hallucinations, impaired judgement, and paranoia. Long term use complication includes a tolerance in which the person must use more for the same effect. There drugs are not addictive in the usual sense.

**Cocaine**

Also known as "coke", "crack", and "snow", cocaine is usually snorted in its powdered form, smoked as crack (cocaine mixed with baking soda and water and, when dry, broken into tiny pebbles), or injected in a dissolved form. Physical and mental effects of cocaine are a "high"; a feeling of power; increased energy; and increased blood pressure, heart rate, and breathing. Long-term use can cause lung infections, depression, heart attack or failure, seizures, strokes, "cocaine psychosis", personality changes, and birth defects. Cocaine is highly addictive.

**Narcotics/Opiates**

Also known as "junk" and "smack", this group includes heroin, morphine, and codeine. These drugs are usually taken in pill form or injected. They are usually used for pain relief, treating cough, and anesthesia. Physical and mental effects
include relaxation, drowsiness, and gastric upsets. In high doses, death may occur from a slowed respiration and heart rate. Infection (e.g., hepatitis or acquired immunodeficiency syndrome [AIDS]) is also possible from using contaminated needles.

**Stimulants**

Also known as "uppers’ and "speed”, this group includes diet pills, over-the-counter stimulants, and amphetamines. These drugs stimulate the central nervous system and are sometimes used to counteract depression. Physical and mental effects include "speeded-up" metabolism, anxiety, nervousness, and increased heart rate and blood pressure. Long-term use can cause dependence and withdrawal, liver damage, and heart problems.

**Sedatives**

This group includes minor tranquilizers (e.g., Valium or Librium); barbiturates (e.g., Amitol or Seconol); and methaquolone (Quaalude). These drugs are usually used as antianxiety medications, sleeping pills, and pain relievers. Physical and mental effects include relaxation, decreased heart rate and breathing, slurred speech, impaired judgement, incoordination, and poor reaction time. Long-term use can cause dependence and withdrawal symptoms, suicide from overdose, death, birth defects, and the risk of AIDS from intravenous drug use.

**Inhalents**

This group includes substances such as airplane glue ("glue"); nail polish remover; aerosol sprays; nitrous oxide (laughing gas); gasoline; lighter fluid; paint
thinner; amyl nitrate; and butyl nitrate. Several of these substances usually are
around the household or for personal care, whereas amyl nitrate and butyl nitrate
help treat heart disease, and nitrous oxide is used as an anesthetic. Physical and
mental effects include central nervous system depression, coughing, decreased
heart rate and breathing, impaired judgement, loss of self-control, and
unconsciousness. Death may result if these drugs are used in high dosages or too
quickly. Long-term use can cause fatigue, weight loss, and liver and brain damage.

NICOTINE

Nicotine is usually smoked in cigarettes, cigars, and pipe tobacco, and
chewed in chewing tobacco and snuff. Physical and mental effects include
relaxation, stimulation, mood changes, appetite suppression, decreased feeling of
stress, and improved cognitive performance on some tests. Effects of long-term
use are addiction; lung illnesses; lung, throat, and mouth cancer; and withdrawal
symptoms (craving, irritability, or anxiety). In addition, unlike other substances,
nicotine affects others who must inhale "side stream smoke".

CAFFEINE

Caffeine is found in a broad range of products including coffee; tea; cocoa;
soft drinks; chocolate; and in many over-the-counter medications (e.g., stimulants,
pain relievers, or cough and cold preparations). Its physical and mental effects
include central nervous system stimulation, increased heart rate, nervousness,
anxiety, restlessness, frustration, and irritability. Long-term use can contribute to
chronic illnesses such as heart disease, diabetes, and benign breast tumors.
Dependence and withdrawal symptoms e.g., headache, fatigue, and irritability) also develop.

**SUBSTANCE ABUSE AND MENTAL ILLNESS**

People with mental illness often use substances for self-medication and may put off getting treatment. They may also use substances to counteract side effects of antipsychotics and other medications. Approximately 35% of all people with mental illness also have a substance abuse problem and are considered to have a dual diagnosis. The person with mental illness who abuses substances faces special hazards.

Mental illness affects perceptions, thoughts, moods, and behavior to varying degrees. Chemical changes caused by substances also create changes in these functions. These substances cause temporary or permanent loss of higher brain functions such as judgement, memory, and rational thought - the faculties needed most to compensate for the effects of mental illness. Alcohol and drugs are also general stressors on the body and can contribute to overall stress level. Substances, therefore, may make mental illness symptoms worse. For example, alcohol may double the effect of depressive symptoms; caffeine may make the effects of mania or anxiety worse; and hallucinogens or marijuana may worsen a psychosis.

Substances may also interact poorly with medications through direct chemical interactions or by counteracting the intended effects of antianxiety, antidepressant, or antipsychotic medications. The person with mental illness need to take care of
the healthy parts of the body to help fight mental illness.

WHERE TO GET HELP?

* American Cancer Society - information and smoking-cessation programs.

* National Institute on Drug Abuse - information on alcohol and drug abuse.

* Alcoholics Anonymous - information, education, support for alcoholics and families - has chapters in most cities and towns.

* Narcotics Anonymous - information, education, support for drug abusers and families has chapters in most cities and towns.

* Double Trouble Groups - groups for people with mental illness and substance abuse.

* Local private and public alcohol and drug abuse treatment facilities and agencies.
HAZARDS OF SUBSTANCE ABUSE

Transparency 1

COMMONLY ABUSED SUBSTANCES

* ALCOHOL
* ILLEGAL DRUGS
  MARIJUANA
  HALLUCINOGENS
  COCAINE
  NARCOTICS/OPIATES
  STIMULANTS
  SEDATIVES
  INHALENTS
* NICOTINE
* CAFFEINE
HAZARDS OF SUBSTANCE ABUSE

Transparency 2

ALCOHOL

Examples: Beer, wine, hard liquor, over-the-counter medications.

Effects: Intoxication, slurred speech, lack of coordination, poor reaction time.

Long-term use: Dependence, withdrawal, cirrhosis of the liver, brain damage, memory problems.
HAZARDS OF SUBSTANCE ABUSE

Transparency 3

MARIJUANA

Names: Pot, grass, weed, reefer, joint.

Effects: Memory problems, poor judgement, increase in heart rate and blood pressure, perceptual distortions.

Long-term use: Cancer, amotivation, reproductive problems.
HAZARDS OF SUBSTANCE ABUSE

Transparency 4

HALLUCINOGENS

Names: Acid, angel dust.

Examples: LSD (acid); PCP (angel dust); MDA, peyote, mescaline.

Effects: Altered perceptions, paranoia, hallucinations, impaired judgement.

Long-term use: Dependence.
HAZARDS OF SUBSTANCE ABUSE

Transparency 5

COCaine

Names: Coke, crack, snow.

Effects: A "high"; feeling of power; increased energy; increased blood pressure, heart rate, and breathing.

Long-term use: Lung infections, addiction, depression, heart attack/failure, seizures, strokes, "cocaine psychosis", personality changes, birth defects.
HAZARDS OF SUBSTANCE ABUSE

Transparency 6

NARCOTICS/OPIATES

Names: Junk, smack.

Effects: Relaxation, drowsiness, calmness.

Long-term use: Stomach problems, infections (AIDS or hepatitis); difficulties with pregnancy; addiction; risk of death.
HAZARDS OF SUBSTANCE ABUSE

Transparency 7

STIMULANTS

Names: Uppers, speed.

Examples: Diet pills, over-the-counter stimulants, amphetamines.

Effects: "Speeded-up" metabolism, anxiety, nervousness, increased heart rate and blood pressure.

Long-term use: Dependence, liver damage, heart problems.
HAZARDS OF SUBSTANCE ABUSE

Transparency 8

SEDATIVES

Names: Downers, ludes, barbs.

Examples: Minor tranquilizers; barbiturates; quaaludes.

Effects: Relaxation, decreased heart rate and breathing, slurred speech, impaired judgement, poor reaction time.

Long-term use: Dependence, withdrawal symptoms, risk of suicide from overdose, birth defects.
HAZARDS OF SUBSTANCE ABUSE

INHALENTS

Names: Popers, snappers, glue, laughing gas.

Examples: Airplane glue (glue); nail polish remover; aerosol sprays; lighter fluid; paint thinner; nitrous oxide; amyl nitrate; butyl nitrate.

Effects: Stimulation, coughing, decreased heart rate and breathing, impaired judgement, loss of self-control, unconsciousness.

Long-term use: Fatigue, weight loss, liver and brain damage.
HAZARDS OF SUBSTANCE ABUSE

Transparency 10

NICOTINE

Examples: Cigarettes, cigars, pipe tobacco, snuff, chewing tobacco.

Effects: Relaxation, stimulation, tension release, mood changes, appetite suppression, decreased feelings of stress, improved cognitive performance.

Long-term use: Addiction; lung illness; lung, throat, and mouth cancer; effects on others; withdrawal symptoms (craving, irritability, anxiety).
HAZARDS OF SUBSTANCE ABUSE

Transparency 11

CAFFEINE

Examples: Coffee, tea, soft drinks, chocolate, over-the-counter medications.

Effects: Stimulation, increased heart rate, nervousness, anxiety, restlessness, frustration, irritability.

Long-term use: Dependence, withdrawal symptoms (headache, fatigue, irritability); contributes to chronic illnesses (heart disease, diabetes, breast tumors).
HAZARDS OF SUBSTANCE ABUSE

Transparency 12

EFFECTS OF SUBSTANCE ABUSE ON MENTAL ILLNESS

* Self-medication prevents treatment.

* Effects contribute to distortions of perception, thought, mood, and behavior symptoms.

* Substances interact with medications.
Appendix I

Informed Consent Form
INFORMED CONSENT FOR PARTICIPATION IN RESEARCH

**Topic:** "Comparative Effectiveness of Therapeutic Strategies on Drug Knowledge and Drug Attitude in Inpatient Psychiatric Substance Abuse Population."

**Place of Research:** Kalamazoo Regional Psychiatric Hospital (KRPH).

**Introduction:** The present research is formulated to enhance the participant's knowledge on substance abuse issues. The researcher is interested in knowing whether therapeutic structure (individual-instruction, group-instruction, or individual and group instruction) has any effect on changing subjects' knowledge and attitude towards drugs. This change will be measured in percentage before and after the study via the completion of The Pennsylvania State University Drug Education Scale. Individual instruction will be provided two times per week for six weeks. Two group instruction sessions will be provided for 30 minutes length per week for 6 weeks. Two individual and group instruction sessions of 30 minutes each per week will be provided for six weeks. Each group will have a minimum of 5 subjects and a maximum of 8 subjects. You may be assigned to any of the above 3 experimental groups, or assigned to a control group where no instruction is provided. Education on substance abuse issues will be given by verbal presentation, written materials, and via audio and video tapes. The data will be used to measure learning differences based on the instructional strategy. The study is conducted to meet the researcher's need for dissertation in the psychology department at Western Michigan University. This study will require 6 to 8 weeks of participation from subjects and educational sessions will be conducted on subjects' respective units. Research findings will be educational for the readers.
and recommendations can be adopted by practicing clinician in dealing with the dually diagnosed population. Participation in this research will not alter or jeopardize any ongoing treatment services provided at KRPH.

Subject information and consent: By signing this form, I, __________________, express my willingness to participate in this study by agreeing to fill out related questionnaires as given by the researcher and attend scheduled sessions as assigned. I will cooperate with the researcher in questions and in discussions until the end of this research.

As a participant I understand that participation in this research is fully voluntary and that I may withdraw from this study at anytime without any resulting consequences. I also understand that all contents and information given to the researcher is fully confidential and for the purposes of this research only. No names will be mentioned in the outcome study and all data will be destroyed by the researcher upon completion and approval of this project by Western Michigan University.

_________________________________________
Researcher Name, 
Address, and phone

_________________________________________
Signature of subject 
Hospital unit, date

_________________________________________
Research Advisor (name and phone) 
Psychology Department 
Western Michigan University
Appendix J

Human Subjects Institutional Review Board
Letter of Approval
Date: October 9, 1991
To: Amber Haque
From: Mary Anne Bunda, Chair
Re: HSIRB Project Number 91-05-21

This letter will serve as confirmation that your research protocol, "Comparative effectiveness of therapeutic strategies on drug knowledge and drug attitude in inpatient psychiatric substance abuse population" has been approved after full review by the HSIRB. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the approval application.

You must seek reapproval for any change in this design. You must also seek reapproval if the project extends beyond the termination date.

The Board wishes you success in the pursuit of your research goals.

xc: Mountjoy

Approval Termination: October 9, 1992
BIBLIOGRAPHY


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