

AN ABSTRACT OF THE THESIS OF

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Study of a Treatment Population

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Relapse is a common occurrence in the treatment of adolescent substance abuse. It is estimated that one out of three adolescents will relapse after treatment termination. Although much attention has been given to family factors which influence an adolescent's use and abuse of drugs, this same vigorous attention has not been given to determining if family factors play a role in an adolescent resuming drug use after treatment termination. It has been theorized that the same family factors which increase the risk of an adolescent to use and abuse drugs also can help in gaining an understanding of why relapse occurs. Three prominent theories used to explain family factors associated with drug use/abuse and relapse are genetic and social learning theories, and family dysfunction.

The purpose of this study was to investigate if familial factors, as proposed from the theories presented, were predictive of relapse. The sample in this study consisted of 31 adolescents who entered drug treatment between 1986 and 1988. Follow-up data

of the adolescent's pattern of drug use since treatment discharge were collected through telephone interviews with the parent or guardian of the adolescent one and a half to nineteen months after treatment. The family information used in this study was collected through self-report questionnaires given to the adolescent at time of treatment. Specific family variables used in this study were: parental and sibling substance abuse history, number of parents in residence, past experience of physical and/or sexual abuse, and history of running away from home. Regression analyses were used to assess if these family variables were associated with relapse.

Results of the data analyses found partial support for genetic and social learning theories of relapse, as well as relapse from a family dysfunction perspective. Findings indicated that adolescents who lived with only one parent or neither parent in comparison to those who lived with both parents, those who had experienced physical and/or sexual abuse, and those who perceived their father as not having a history of substance abuse were more at risk to relapse. Findings further indicated a cross-gender effect in that male adolescents who reported mother as having a substance abuse history were more likely to relapse. This same finding was not found for females in this study. The results indicate that given specific family dynamics, a sub-population of adolescents may be targeted on entrance to treatment to be at greater risk to relapse.

**FAMILY INFLUENCES ON ADOLESCENT DRUG RELAPSE:
A FOLLOW-UP STUDY OF A TREATMENT POPULATION**

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Definition of Terms

Addiction: A drug-induced change in a person such that he or she requires the continued presence of the drug to prevent the occurrence of physical and/or psychological abstinence syndrome.

Addict: A person who requires the continued presence of a drug to prevent the occurrence of abstinence syndrome.

Dependency: Includes the concept of psychological dependence as well as physical dependence on a drug.

Recovery: For purposes of this study, recovery will be defined as abstinence from drug use after voluntary or forced treatment.

Relapse: For purposes of this study, relapse will be defined as posttreatment drug use, regardless of frequency or amount (for a thorough discussion of issues relevant to the definition of relapse and recovery see Tims and Leukefeld, 1986; Tims and Ludford, 1984).

Experimentation: The use of a drug or combination of drugs which does not interfere with an individual's health, social relationships, vocational functioning, financial situation, or legal reputation.

Drug abuse or substance abuse: The use of a psychoactive drug, alcohol, or a combination of the two to the extent that it interferes with an individual's health, social relationships, or vocational functioning. The official diagnostic criteria are: a pattern of pathological use, impairment in social or occupational functioning due to substance use and a minimal duration of disturbance of at least one month (adapted from Kaufman, 1985; p. 223). In this study, drug abuse and substance abuse will always include alcohol unless it is necessary to specify alcohol or other drugs.

Family dysfunction: For purposes of this study, family dysfunction is defined as a consequence of family practice or behavior patterns that undermine the stability of the family system and produce pain and suffering (psychological and/or physical) which virtually all individuals would seek to avoid.

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CHAPTER I

Introduction

The use of drugs by adolescents has become a national focus of concern. This concern becomes amplified when experimentation with drugs leads to abuse. Survey findings indicate that American adolescents are continuing to experiment with substances at an alarming rate (Johnston, O'Malley and Bachman, 1984). This coupled with the highly addictive quality of drugs which have entered the "drug market" in recent years (such as methamphetamine and crack cocaine) has led to more adolescents receiving treatment for chemical dependency than at any other time (Winters and Henley, 1988).

Initially, the treatment of addiction was designed for adult male alcoholics, but as adolescents began to enter treatment for drug abuse, new programs were developed which focused on the special needs of the adolescent (Rahdert, 1988). Beginning in the 1970s family therapy became an important aspect in the treatment of drug abuse especially in the treatment of the adolescent substance abuser.

Prior to the 1970s the treatment of substance abuse involved individual psychotherapy. However, given low rates of recovery and high rates of relapse, individual therapy alone was recognized as ineffective (Textor, 1987). The use

developed as a consequence of both the observation of clinicians as well as research findings indicating that families play an important role in the initiation and maintenance of drug use (Baither, 1978; Coleman and Davis, 1978; Kaufman, 1985; Textor, 1987). As stated by Textor (1987):

"...individual therapy with its emphasis on psychodynamics, usually was not effective. Low rates of recovery were reported, and relapse often occurred among addicts who had improved. It was also observed that during the periods of improvement, addicts' families of origin suffered crisis of their own, members became depressed, parents spoke of divorce, siblings developed symptoms; these crises dissipated as soon as the patient relapsed into addiction" (p. 495).

Thus, the locus of the problem was seen within the family. For treatment to be effective, the family needed to be treated as well as the target patient (Textor, 1987). Today, family based therapy is a widely recognized aspect of the treatment process. As reported by Coleman and Davis (1978), 93% of 2,012 agencies, responding to questionnaires in the United States, Puerto Rico, and the Virgin Islands stated they provided some type of family therapy.

Even with the inclusion of family therapy in treatment, however, statistics indicate that recovery rates for drug abuse are still low (Burling, Reilly, Moltzen, and Ziff, 1989; Leukefeld and Tims, 1989). It has been reported that one out of three adolescents who complete drug abuse treatment will relapse (Barun and Bashe, 1988). High

relapse rates make the treatment process frustrating for patients, families, and clinicians and are an issue of great concern (Leukefeld and Tims, 1989).

Most of the existing theory of the family role in relapse comes from observations of therapists working in treatment with adolescents. Few studies have empirically investigated family factors which may affect whether or not an adolescent remains in recovery. As proposed by Jaffe (1984):

"Despite the fascinating studies that have emerged over the past decade suggesting that there may be several genetically transmitted types of vulnerability for alcoholism, most efforts to evaluate drug abuse programs do not include detailed family histories ... I think it would be useful to study family drug use histories of patients in treatment to determine whether such familial factors influence treatment outcome" (p. 23).

The purpose of this study was to investigate family factors which may play a role in an adolescent's drug relapse after substance abuse treatment. Specifically, variables such as who the adolescent lives with, running away from home, physical or sexual abuse, and parental/sibling substance abuse have been correlated with an adolescent's initiation into substance use and abuse of substances once experimentation has taken place. These variables thus become important considerations in trying to understand family factors which may influence an adolescent to relapse after drug treatment. What follows, then, is first an overview of family influences on adolescent

substance use and abuse, and second, a discussion of how families may, in turn, influence relapse as well as a consideration of the recovery and relapse process.

CHAPTER II

REVIEW OF THE LITERATURE

Family Influences and Adolescent Substance Use

With growing concern about the etiology of substance abuse, researchers began to focus on family influences in the 1980s. Many studies have found a high correlation between family dynamics and adolescent substance use (Freidman and Humphrey, 1985; Jurich, Polson, Jurich, and Bates, 1985; Levenson, Oyama, and Meek, 1987; McDermott, 1984; Needle, Su, Doherty, Lavee, and Brown, 1988; Newcomb and Harlow, 1986; Stiffman, Earls, Powell, and Robins, 1987; Tudor, Petersen, and Elifson, 1980; Vicary and Lerner, 1986). Two widely recognized theories used to explain family transmission of substance use are Social Learning Theory and Genetic Theory. What follows is a brief discussion of these two theories.

Social Learning Theory

It is the modeling of the parents or the caregiver that first teaches a child what is and is not acceptable behavior. Research findings indicate that children tend to "imitate their perceptions of the parents' drinking, especially the same sex parent" (Harburg, Davis, and Caplan, 1982, p. 497; for a review of the literature see Halebsky,

1987). Kandel, Kessler, and Margulies (1978), in reviewing family histories, found that 82% of parents who drank had adolescents who also used alcohol, and 72% of parents who abstained from drinking had adolescents who also abstained. The literature indicates that most adolescents who abstain from alcohol use come from homes where parents do not consume alcohol, most adolescents who drink moderately come from homes where the parents' drinking is moderate, and the heavy drinking adolescent comes from a home where the parent's consumption of alcohol is extreme (Barnes, 1977). This parental transmission of substance use to adolescents is not limited to just the use and abuse of alcohol but appears to be a factor in adolescents' use of other substances as well. Fawzy, Coombs, and Gerber (1983), found that with adolescents age 13 to 17, 72% of parents who consumed one or two alcoholic drinks per day had adolescents who abused drugs and 78% of parents who used marijuana had an adolescent who was classified as a drug abuser. A child growing up in an environment where substances are used learns that the use of substances is a natural part of everyday life and thus is likely to imitate that behavior. The extent of family influences on an adolescent's drug use is further explained by research that finds that many adolescent substance abusers' first experimentation with substances took place in the family home (Jurich et al., 1985; Textor, 1987).

It has also been hypothesized and supported that a further outcome of parental use of substances is that it communicates to the child that drugs are an appropriate means of coping with stress. "In the absence of coping skills learned from parents, the children turn to parental mode: coping with stress through alcohol" (Jurich et al., 1985; p. 147). As stated by Birmingham (1986):

"Generally, the adult substance abuser has, over the years of non-abuse, developed into their behavioral repertoire, coping skills, survival techniques and skills for living, however, they may be lost. The adolescent substance abuser does not have the luxury of having experienced them to incorporate them into his living techniques" (p. 123).

The lack of coping skills is further demonstrated in the high incidence of adolescent substance abusers running away from home (Brook, Kaplun, and Whitehead, 1974). It must also be stated however, that a child who runs away from home may be responding to a situation in which he or she cannot cope. For example, research findings indicate a strong correlation between sexual abuse and running away from home (Farber, Kinast, McCoard, and Falkner, 1984).

Genetic Theory

Studies have found that offspring of alcoholics are predisposed to develop alcoholism or, at the very least, run a higher risk of becoming alcoholics. This heightened risk is estimated to be three to five times that of children who do not have an alcoholic parent (Levenson, Oyama, and Meek,

1987). It has been reported that 50% of the fathers of adolescent substance abusers are alcoholics (Kaufman, 1985). Genetic theory posits that there is a "genetically transmitted biochemical abnormality that predisposes some individuals to abuse of a drug if they use it" (Wesson, Havassy, and Smith, 1986, p. 6). Genetic theory helps to explain why most individuals who use alcohol do not become alcoholics although the specific mechanisms of transmission are not yet clear. In addition, most of the studies focus on alcohol, less is known about other substances and their genetic connection or familial transmission. There is however, growing evidence that, as has been found with alcohol abuse, genetics plays a role in other substance abuse as well. In a study by Meller, Rinehart, Cadoret, and Troughton (1988), family histories of subjects entering treatment were compared. Subjects were classified as alcohol abusers, drug abusers, or both. The results indicated that drug abusing subjects were more likely to have a family history of drug abuse. In contrast, family history of drug abuse was not found for those entering treatment due to abuse of alcohol only.

In summary, the existing literature supports the proposition that there is a relationship between parental substance use and adolescent use. An adolescent may use/abuse substances as a result of learning the behavior, as a means of coping with stress, and/or because of a

genetic predisposition to abuse substances. Yet, family influences upon adolescent substance use have been found to go beyond just these three factors (Braucht, Brakarsh, Follingstad, and Berry, 1973). For example, in a study by Needle et al. (1988), three groups of adolescents - drug users in treatment (clinical group), drug users not in treatment, and nondrug users - were compared in terms of family, interpersonal, and intrapersonal variables. Clinical families, in comparison to families in the other two groups, were characterized by a mother's more frequent use of substances, parental divorce, and low family cohesion. Needle et al. conclude from their findings:

"Early use of illicit substances and using substances to cope with problems characterized those adolescents who eventually sought treatment. It appears that both early disengagement from the family (low cohesion) and early involvement with drug-using peers, as well as use of substances, reflect attempts to cope with family-related problems. It also seems that family problems precede drug use and drug-related problems. Data obtained from this study are consistent with those obtained from clinical studies which found family instability, disorganization, and lack of cohesiveness to be risk factors associated with adolescent alcohol and drug use" (p. 1235).

In a study by Gantman (1978), which compared the families of normal, disturbed, and drug-abusing adolescents, family interactions differentiated drug-using and disturbed adolescents (defined as exhibiting psychopathology excluding mental retardation, organic brain syndrome, or psychosis and not using drugs; p. 432) from normal adolescents. Gantman concluded that emotional symptoms found for both disturbed

and drug-abusing adolescents were manifested at the family level and "the adolescent alone was clearly not the problem" (p. 438). What these studies demonstrate is that, in trying to understand why adolescents abuse substances, other family dynamics must be considered.

What follows is a discussion of family dynamics specifically in terms of family dysfunction which not only helps to integrate the family factors previously discussed, but also is pertinent in gaining an understanding of how the family may influence relapse.

Family Dysfunction as a Factor in Adolescent Substance Use

As previously stated, in the late 1970s family therapy became integrated into the treatment of drug abuse. Families were thought to play a role both in producing the drug abuser as well as maintaining his or her behavior (Textor, 1987). This, coupled with the observation that drug abusers continued to have close relationships with their families until about age thirty and that roughly 60% of substance abusers lived with their families, led clinicians to realize that family issues needed to be addressed and that families, not just the drug abuser, needed to be treated (Textor, 1987).

The family of a substance abuser has been depicted as having one over-involved and dominant parent and one parent who is distant, ineffectual, and/or rejecting (Emmelkamp,

and Heeres, 1988; Wermuth and Scheidt, 1986). The distant parent is usually the father of the adolescent and his lack of involvement is seen in emotional detachment and/or through actual physical separation (Harbin and Maziar, 1975; Jurich et al., 1985; Needle et al., 1988). In a study by Schneider, Kojak, and Ressdorf (1977), the hypothesis of "father distant" was tested. They found that, compared to nondrug using males, drug abusing males were more likely to report a difficult or distant relationship with their fathers. The difference in the father-son relationship was found not only to differentiate the drug using group and the control group but also the drug using group and a general psychiatric outpatient group. From their findings Schneider et al. concluded that, in a population of young men with emotional problems, it is those with a history of substance abuse who significantly report a distant relationship with their fathers. Therefore, a negative father-son relationship may be specifically associated with that of the substance abuser. The importance of the father-child relationship is further supported by the research of Coombs and Landsverk (1988). In their study of parenting styles and substance use, one factor which distinguished adolescents who were the least likely to use drugs from those who did use substances was a close relationship with the father.

A difficult or distant father-son relationship has also

been characterized as physically abusive (Kaufman, 1985). While fathers have been found to be punitive to the male substance abuser they have been found to be over-involved with substance abusing daughters to the point of being sexually involved (Kaufman, 1985). Textor (1987) reported "The high incidence of incest - up to 59% of female addicts were sexually abused as children - is evidence of the intensity of the parent-child relationship" (p. 499). In a study by Kaufman and Kaufman (1979), it was found that 80% of female addicts were victims of incest. What these figures indicate is a high correlation between sexual abuse and drug abuse for females.

Another consistent finding is the relationship between family structure and substance use. Greater overall drug involvement has been found with adolescents whose parents have divorced in comparison to adolescents from intact families (Flewelling and Bauman, 1990; Needle, Su, and Doherty, 1990). Divorce can be seen as an indicator of family instability (Harbin and Maziar, 1975) and an outcome of family conflict. It is not uncommon for children of divorce to feel guilty, alienated, rejected, or abandoned (Sorosky, 1977). Although, experiencing these emotions is dependent on the age of the child and is mediated by many factors including the amount of conflict prior to the divorce and the amount of contact the child has with the noncustodial parent (e.g., Belsky, Lerner, and Spanier,

1984; Emery, 1988), high levels of conflict prior to the use of substances has been a characteristic found in the families of adolescent alcohol abusers (Zucker and Gomberg, 1986). Textor (1987) posited that abusing drugs would be a way to combat the pain of loss, to show "loyalty to the remaining parent, or of guarding against the pain of new loss" (p. 501).

Another outcome of divorce can be a lack of contact between the nonresidential parent, which is usually the father, and the child. Furstenberg, Peterson, Nord, and Zill (1983), found as few as 16% of divorced mothers reported father-child contact as often as once a week or more and 50% reported no contact with fathers in the previous year. Given infrequent contact between a child and his or her nonresidential father, the relationship between divorce and substance abuse may not be limited to the divorce, in and of itself, or to family conflict prior to the divorce, but may also be explained in part by the lack of a close father-child bond.

From a Family Therapy perspective, the use of drugs by an adolescent serves as a stabilizing function. It can draw a distant father back into the family (Schwartzman, 1975), can serve to hold the family together (Madanes, 1981), or can serve as a distraction from other conflicts in the family (Freidman, 1974). "Often the drug abuser would protect the coalition between mother and father by

attracting onto himself the conflict and pain of the marital relationship" (Klagsbrun and Davis, 1978; p. 153). The adolescent's drug involvement intensifies family bonds and focuses parents in conflict away from each other and allows conflict to be directed toward the drug abusing adolescent. Once this pattern of interaction is established, it stabilizes the turbulent family system and therefore serves an important function. This observation helps explain why families may influence relapse and will be considered further in the discussion of drug relapse.

As discussed, parental substance abuse, conflict, divorce, physical and/or sexual abuse, and family dysfunction have been correlated with adolescent substance abuse. In the next section, these factors will be discussed as they relate to the relapse process.

The Relapse Process

One major reason for focusing on the family of the adolescent substance abuser who undergoes treatment is the simple fact that most will return to that family environment after treatment. Given the influence that families have been found to have on an adolescents' use of drugs, it seems extremely pertinent to question whether these, as well as other family variables, influence relapse. As previously stated however, family factors that may influence recovery

have not been a major area of investigation. Also, outcome studies of adolescent populations alone are seldom conducted. Many studies which do include adolescents also include young adults and adults. These studies indicate that criminal activity and employment are key factors in whether an individual stays in recovery or relapses (for a review of the literature see Maddux and Desmond, 1986). Although this may be somewhat true of older adolescents, it may not be a factor that figures in younger adolescents' relapse. Also, many follow-up studies are done for the purposes of treatment evaluation. Various treatment programs are compared and client or patient assessment focuses on employment, criminal behavior, and other socially productive activity, before and after treatment (e.g., Hubbard, Rachal, Craddock, and Cavanaugh, 1984). This type of follow-up evaluation is definitely needed to assure that treatment is as effective as possible, however, it makes family variables, such as those discussed, not a focus of concern.

For the above reasons, the majority of previous research in this area is not relevant to this discussion. Therefore, the literature addressed in this section, both in terms of research and theory, is specific to adolescents and/or discusses family variables which have been found to influence recovery or may be theorized to have a treatment effect.

There are several theories of relapse. The dominant theories are genetic, metabolic, learning (conditioning and social), psychopathology, stress, social support, and the twelve-step recovery model (Wesson, Havassy, and Smith, 1986). This proposal examines learning theory, genetic theory, and relapse from a family therapy perspective.

It is important to point out that other issues relevant to the relapse process will not be addressed; such as, individual characteristics, length of time in treatment, and whether the individual on exit from treatment maintains aftercare support (for a thorough discussion of these issues relevant to treatment outcome see Freidman and Beschner, 1985; Simpson and Sells, 1982; Tims and Leukefeld, 1986; and Tims and Ludford, 1984). Not one single factor but rather multiple factors probably best explain why some individuals relapse and others remain in recovery. Excluding a discussion of these issues, as well as other factors which may influence relapse, is certainly not to imply these issues are not important. Because the purpose of this study was solely to investigate how families may influence relapse, however, these issues were not included in the discussion.

Stress Response and Social Learning Theory as an Explanation of Relapse

Given the findings that parents who use substances as a means of coping with stress have children who imitate that

coping behavior, it has been theorized that an adolescent who undergoes treatment for substance abuse may relapse due to lack of learned skills to cope with high stress situations (Wesson, Havassy, and Smith, 1986). Because of the lack of role modeling of appropriate stress responses, children whose parents use substances as a means of coping are believed to be more at risk to relapse. One could further theorize that if a parent continued to use substances after an adolescent receives treatment, that adolescent may be more at risk to relapse given the continued role modeling of substance use by the parent and because drugs in the home may allow for easy accessibility.

Genetic Theory of Relapse

From a genetic theory, relapse has been explained by positing that given a person's genetic predisposition to drug addiction, the individual is more likely to relapse (Wesson, Havassy and Smith, 1986). Individuals who are at greater risk to become drug addicted due to genetic factors, experience more powerful and rewarding physiological and psychological effects from drugs, hence making abstinence more intense and more difficult than for someone who is not addicted (Gonzales, 1988). Therefore, the addict, unlike the non-addicted substance abuser, would be more at risk to relapse (Gonzales, 1988).

Family Dysfunction and Relapse

At one time it was believed that physiological addiction was the factor most relevant in understanding why an individual could not tolerate abstinence (Schwartzman, 1975). Research findings however, indicated that physiology was not enough to explain relapse. For example, it was found that 90% of addicted Viet Nam veterans "kicked" their drug use on leaving Viet Nam (cited in Alexander and Dibb, 1977). Many of these veterans experienced mild to no abstinence syndrome in spite of the fact that the heroin they had been using was 25 times more potent than that sold on the streets in the U.S. (Siegel, 1973). These findings, as well as the observations of clinicians, indicate that to gain a thorough understanding of relapse, the social context of the individual has to be recognized. One very important social context is the family (Alexander and Dibb, 1977; Schwartzman, 1975). As with initial drug use, to understand relapse, family dynamics must be considered.

Because drug use has been found to serve a function in the family, the stopping of drug use brings disruption to established family patterns. When the drug abuser fails to stop using this facilitates unity (reestablishes the norm of family patterns and interactions) in the family once again (Stanton, 1979). It has been observed that when an individual ceases drug use, some families will sabotage recovery (Textor, 1987). Families seem to need drug abusing

members. They try to keep them in their designated "sick role" by putting "pressure on rehabilitated patients to return to their old modes of behavior" (Textor, 1987, p. 495). From these observations, it would appear that the adolescent most at risk to relapse is the one whose family of origin would be characterized as dysfunctional. Their drug use appears to serve a purpose by stabilizing the family. To maintain the established pattern of interaction which is functional for the family system, their drug use needs to continue.

As previously shown, divorce has been correlated with substance abuse and it may be a factor in relapse as well. In a Scandinavian follow-up study of young male and female substance abusers (Holsten, 1980), being raised in a broken home and early separation from both parents (before the age of 12) were found to be factors in negative outcome (defined by a measure of social functioning in work and education, involvement with non-abusing friends and family, and mental status of the patient; p. 492). In addition, having a father who had an alcohol problem, being male, and criminal activity were also related to negative outcomes. The impact of these variables on treatment outcome however, was found to be dependent on the amount of time since treatment termination (first and second follow-up took place one to five years after treatment). Being raised in a broken home and father's substance abuse, although found to have a

negative impact at first follow-up, were not factors in negative outcome two years later. Early separation from both parents, although not found to be a factor in negative outcome at first follow-up, was found to be a factor in negative outcome two years later. The findings of this study, conducted in Norway, may not be generalized to the United States because of cultural differences. However, studies in other cultures have also found parental effects on treatment outcomes. For example, in a London follow-up study (Gordon, 1983), it was found that male adolescents who had experienced parental loss before age 15, on the average, were more likely to show poor outcome after drug abuse treatment; poor outcome was associated with both re-conviction and continued addiction. Unfortunately, parental loss was not defined. Therefore, it is not clear if the findings are limited to subjects who lost a parent due to death or if parental loss was defined by divorce as well.

These two studies appear to support the reported observations made by family therapists and indicate that family dynamics, specifically, divorce (parental loss) and father drug abuse, influence treatment outcome.

Summary

Research strongly supports both social learning and genetic theory as explanations of adolescents' initiation

into drug use and abuse of substances once experimentation has taken place. Children who grow-up in homes where parents use substances appear to imitate that behavior. Research strongly suggests that a genetic factor is involved in alcoholism. Genetic involvement in the intergenerational transmission of other substance addiction is less strongly supported by empirical evidence, although there still seems to be evidence of biochemical anomalies. Furthermore, it has been posited that family dysfunction has an impact on an adolescent's substance involvement. There appears to be a high correlation between adolescents' use of drugs and family conflict, divorce, father-distance, physical and/or sexual abuse, and running away from home. Even though these factors have been investigated as a means of understanding adolescent substance involvement, little research has focused on these factors and their relationship to the relapse process. The research in this area suggests that adolescents who have experienced some type of parental separation and those whose father's have a history of substance abuse are more at risk to relapse.

Purpose of the Present Study

Many adolescents who go through substance abuse treatment continue to live with their families afterwards. Given the relationship between family dynamics and

adolescent substance use, it is important to understand how family factors influence whether the adolescent remains drug free or begins substance use once again. The high incidence of treatment failure further demonstrates the need for more investigation into factors which influence the relapse process.

The purpose of this study was to test whether family variables affect treatment outcome. Of special concern was family dysfunction and its relationship to the relapse process. Therefore, variables that have been correlated with family dysfunction and were present prior to the adolescent entering treatment were included in the study.

Two different explanations for relapse were examined.

1. Parental or sibling use of substances may have an effect on treatment outcome. Adolescents whose parents or sibling(s) abuse substances may be more at risk to relapse given a genetic predisposition to addiction or due to parental role modeling of inappropriate stress response. Not unlike most research in this area, the study was not able to differentiate between these two theories as an explanation for relapse.

2. From a Family Therapy perspective, family dysfunction may influence treatment outcome. Because abusing substances has been found to stabilize the turbulent family structure, family members may sabotage recovery to maintain the established pattern of interaction. Variables

such as running away from home, living in a single parent home, and/or experiencing physical/sexual abuse have been correlated with family dysfunction and are characteristic of an adolescent substance abuser and his or her family of origin. Therefore, from a Family Therapy perspective, these variables become important in trying to assess family dynamics that may impact drug relapse.

The effects of specific variables on relapse were interpreted in terms of these two explanations for relapse.

Hypotheses

To assess the value of the genetic and/or social learning theory of relapse the following hypothesis was tested:

Hypothesis 1. Adolescents who at intake to treatment report parental or sibling history of substance abuse will be more likely to relapse. Father, mother, and sibling substance abuse was considered separately and combined into a single cluster variable.

To assess whether family dysfunction influences relapse, the following hypotheses were tested:

Hypothesis 2. Adolescents who at intake to treatment report physical or sexual abuse will be more at risk to relapse.

Hypothesis 3. Adolescents who at intake to treatment

report having run away from home will be at greater risk to relapse.

Hypothesis 4. Adolescents who at intake to treatment report not living with both parents will be at greater risk to relapse.

Each of these three variables (physical/sexual abuse, running away, and who the adolescent lives with) were analyzed separately to determine each variable's specific affect and then combined into a single cluster variable to determine cluster effect (for a thorough discussion of statistical analyses, see methods section).

CHAPTER III

METHODS

Sample

The adolescents in this study ($n = 16$ males; $n = 15$ females) were admitted into an adolescent drug treatment center between 1986-1988. This treatment facility is located in a Northwestern city with a population of about 100,000. The adolescents were from middle-class families. As shown in Table 1, the age range of the adolescents on entrance into treatment was 12 to 18 with a mean age of 16.19 ($sd = 1.54$).

Table 1. Range, Age, Mean, and Standard Deviation of Males and Females on Entrance Into Treatment

	AGE			
	Range	Mean	SD	N
Males	12-18	16.75	0.86	16
Females	12-18	15.60	1.88	15
All	12-18	16.19	1.54	31

Procedure

The family data were generated through a self-report questionnaire which was completed by the adolescent at time of admittance. The purpose of the questionnaire was to

gather information about the adolescent's drug history, family history, and factors associated with the drug use. For purposes of this study, only relevant family data were used.

The follow-up data were collected in 1988. Data were collected through telephone interviews (conducted by staff personnel) with the parent or guardian of the adolescent. Because the purpose of the follow-up study was to evaluate overall satisfaction with the program, parents or guardians were contacted. Also, it was believed by the researchers that the parent or guardian, unlike the adolescent, would report accurately if drug or alcohol use was continuing.

The follow-up study, whereby parents or guardians were contacted, took place one and a half to nineteen months after discharge depending on when the adolescent completed treatment. The subjects chosen for the follow-up study were randomly selected from the population that entered treatment from 1986 through 1988 (roughly $n = 600$). In all, 68 parents or guardians were contacted. Because the purpose of this study was to assess the impact of family variables on relapse, the follow-up data of each subject were matched to the family data acquired at the time of admittance. Due to missing data at intake, 37 (of the 68 subjects included in the follow-up) subjects were not included in this study. As stated, the purpose of the follow-up study was to assess overall program satisfaction. In all, 13 questions were

asked. For this study, only one item, pattern of drug use since discharge, was used.

Measurement

The dependent variable of this study was pattern of drug use since treatment discharge ascertained through the follow-up responses of parents or guardians. The independent variables, obtained through questionnaires completed by the adolescent at time of treatment admittance, were mother's drug history, father's drug history, sibling drug history, parents in residence (who the adolescent lived with), physical and/or sexual abuse, and running away from home.

Pattern of drug use since discharge. The parent or guardian was asked questions about the adolescent's pattern of drug use since discharge. The responses were coded as follows:

- 1 = continuous sobriety
 - 2 = sobriety with brief relapses (less than a week)
 - 3 = sobriety with extended relapses
 - 4 = continuous or nearly continuous use
 - 5 = drug use consistent with use prior to treatment
- (only one parent/guardian observed this pattern)

Mother, father, and sibling drug history. These three variables were defined dichotomously with a 1 indicating the

adolescent reported that this person had a history of substance abuse and 0 indicating that the person did not have a history of substance abuse. To obtain this information adolescents were asked if the person had a history of substance abuse, whether the person used drugs or alcohol at all, how often he or she drank or used drugs, and how often the person had been seen under the influence or intoxicated.

Parents in residence. The adolescents were asked who they lived with: both parents, mother only, father only, or neither parent. This variable was coded 0 = both parents, 1 = single parent or neither parent.

Physical or sexual abuse. The adolescent responded to the question of whether or not he or she had experienced physical and/or sexual abuse. No distinction was made as to the perpetrator of the abuse (i.e., mother, father, or someone outside the immediate family). Responses were coded dichotomously with a 1 indicating a yes response and a 0 indicating the subject had not experienced this type of abuse.

Run away. Each adolescent was asked if she or he had run away from home. This was a continuous variable defined by the number of times the adolescent reported he or she ran away from home.

Drug use patterns. To assess drug-use patterns, each adolescent was asked to specify which drugs they had used,

the age they began to use that drug, if use was regular or experimental, number of times used if experimental, heaviest use pattern (days per week or times per day), and how long at that level. To obtain the most reliable information possible, the adolescents were asked to specify drug usage for the past six months or during the period when they were most involved with drugs. There were ten drugs the subjects reported to use in varying degrees. These drugs were: alcohol, marijuana, methamphetamine, amphetamine, cocaine LSD, mushrooms, inhalants, narcotics, and tranquilizers. A 0 was coded if the adolescent responded he or she had never tried the drug, 1 was coded if the adolescent responded he or she had tried it (experimentation), and a 5 was coded if the adolescent used the drug on a regular basis (daily or weekly).

Data Analysis

Because this was an exploratory study, the effect of the independent variables on relapse was assessed in two ways. First, individual variables were examined separately. Second, the variables were collapsed into two categories, one category representing possible genetic influences, the other category representing possible family dysfunction. The statistical analyses used were simple and multiple regression. The dependent variable in the regression

analyses was pattern of drug use since discharge with a range from 1 (abstinence) to 5 (level of use consistent with use prior to treatment). The independent variables were those previously stated and defined.

The following procedure was used to collapse the variables into two clusters. One cluster was the combination of mother, father, and sibling drug history. To combine these variables, the procedure used was to give each subject a single score. Specifically, if an adolescent reported mother, father, and sibling all had a history of substance abuse, that subject received a score of three. If the adolescent did not report any of the three family members as having a history of substance abuse, that subject received a score of 0 (0 minimum and 3 maximum).

The second cluster was the combination of the remaining variables: who the adolescent lived with, physical and/or sexual abuse, and running away from home. Running away from home was recoded dictomously; 0 = no report of run away, 1 = report of run away(s).

These scores were then summed. The scores ranged from of 0 to 3 (0 indicating that the adolescent lived with both parents, had not experienced physical and/or sexual abuse, and had not run away from home; 3 indicating the adolescent lived with single parent or neither parent, had experienced physical and/or sexual abuse, and had ran away from home).

There were three purposes in clustering the variables in this manner. First, separating the six variables into two groups, differentiates theories. One group of variables, family members' use of substances, is hypothesized by both genetic and social learning theory to increase the risk of relapse. From a family dysfunction perspective, the remaining variables are hypothesized to increase the risk of relapse. Therefore, combining the variables so that they represented the specific theories allowed for interpretation in terms of the specific theory best found to explain the results. The second reason for combining the variables in this manner was that, as discussed from family dysfunction theory, these variables appear to be characteristic of the adolescent's family of origin, and therefore, effects on relapse may be due to all factors working in concert. Third, there was a need to reduce the number of independent variables given the small sample size in this study which limited the number of independent variables appropriate in a regression analysis.

To assess gender effects, gender (male vs female) was included as an independent variable. Gender differences were also assessed. To determine if months since treatment termination (MST) was associated with relapse, this was also included as an independent variable. Research indicates that relapse is more likely to occur within the first few months to one year after treatment (Leukefeld and Tims,

1989; Maisto and Connors, 1988). Given that the length of time since treatment was not constant and ranged from 1 and one half months to 19 months, it was important to determine if this was a factor in the results that were found. The following procedure was used for testing the hypotheses:

1. Effects of the independent variables on the dependent variable were done in a multivariate model. The effects of each variable, controlling for the others, were then assessed.

2. Significance levels for the parameter estimates of the models were used to determine which variables had a substantial impact on relapse. The 0.05 level was the criterion cut off for determining significance; however, 0.10 level effects are reported.

The analyses focused on the relative impact of parental substance abuse and correlates of family dysfunction on relapse.

CHAPTER IV

RESULTS

Description of the Sample

The reporting of drug use, from most prevalent to least use prior to treatment, is presented in Table 2. Alcohol was the most frequent drug used with a range of responses from 1 (tried) to 5 (used on a regular basis, $\bar{x} = 5.00$, $sd = 5.00$). Narcotics were the only drugs which none of the adolescents used on a regular basis (range 0 to 1). The average age for first experimentation with alcohol was 11.54 and for marijuana, 12.16.

Table 2. Drug Use Prior to Treatment and Alcohol and Marijuana First Use.

DRUG	Range	Mean	SD
alcohol	*1-5	5.00	0.00
marijuana	1-5	4.87	.72
methamphetamine	0-5	2.74	2.25
amphetamine	0-5	1.81	1.96
cocaine	0-5	1.61	2.08
LSD	0-5	1.29	1.71
mushrooms	0-5	0.77	0.92
inhalants	0-5	0.77	1.47
narcotics	0-1	0.26	0.44
tranquilizer	0-5	0.26	0.93
<u>AGE</u>			
alcohol first use	4-15	11.54	2.61
marijuana first use	6-15	12.16	2.18

* Drug use was defined and coded: 0 = never used;
1 = experimentation; 5 = used on a regular basis

Table 3 reports the frequency of responses for the independent variables. Of the 31 subjects, 7 (22.6%) reported mother had drug abuse history, 21 (67.8%) reported father had a history of drug abuse, and 13 (41.9%) reported sibling had a history of substance abuse. Eleven (35.5%) of the subjects had experienced physical and/or sexual abuse. Fifteen subjects did not live with both parents at time of treatment admittance. Number of runaways per subject ranged from 0 to 23 with a mean of 2.39 (sd = 4.66).

Table 3. Reporting Family Drug History; Physical and/or Sexual Abuse; Parents in Residence; and Running Away From Home.

	Yes	%	No	%	Total
Mother Drug History	7	22.6	24	77.4	31
Father Drug History	21	67.8	10	32.2	31
Sibling Drug History	13	41.9	18	58.1	31
Experienced Physical and/or Sexual Abuse	11	35.5	20	64.5	31
Parents in Residence	<u>Both</u> 17		<u>Single</u> 12		<u>Neither</u> 2
Times Ran Away	<u>Range</u> 0-23		<u>Mean</u> 2.39		<u>SD</u> 4.66

Table 4. Months Since Treatment Termination (MST)
and Who Was Contacted At Follow-Up

	Range	Mean	SD
MST	1.5 to 19	9.95	5.20
*Contacted		<u>n</u>	
	Mother	16	
	Father	9	
	Stepfather	2	
	Uncle	2	
	Ex-guardian	1	

* for one subject, data was not available

The follow-up data, presented in Table 4, show that the mother of the adolescent was the most frequently contacted parent ($n = 16$), followed by the father, ($n = 9$). The average time of follow-up contact, after treatment discharge, was 9.95 months ($sd = 5.20$).

Thirty-seven subjects were not included in the study due to missing data. To assess randomness of missing data, the difference in pattern of drug use since treatment discharge (PSD) between those in the study and those excluded were compared. The results, presented in Table 5, indicated a significant difference between the two groups ($t = 2.15$; $sd = .93$).

Table 5. Pattern of Drug Use Since Treatment Discharge (PSD) for Subjects in the Study and Those Excluded Due to Missing Data

Pattern of Drug Use Since Treatment Discharge (PSD)		
	Mean	SD
Subjects in Study (n = 31)	2.42	.99
Subjects not in Study (n = 37)	1.89	.86
(t = 2.15; sd = .94)		

Results of Data Analyses

Simple Regression Analyses. The results of the simple regression analyses with pattern of drug use since discharge as the dependent variable and separate regressions for each predictor, are presented in Table 6. As can be seen, only one independent variable, mother's drug history, approached significance ($p < .07$). This finding indicates that of the variables assessed, mother's drug history was the primary factor in predicting relapse.

Table 6. Results of Simple Regression. Dependent Variable: Pattern of Drug Use Since Treatment Discharge (PSD)

Independent Variables	Coefficient	F-Ratio	R ²
Mother Drug History	.32	3.34*	10.32
Father Drug History	-.13	.48	1.63
Sibling Drug History	-.16	.80	2.69
Parents in Residence	.27	2.36	7.52
Physical/Sexual Abuse	.30	2.93	9.18
Run Away From Home	-.05	.08	.26
Months Since Treatment	.08	.18	.64
Gender	-.18	.96	3.21

* p < .07

Multiple Regression Analyses. Multiple regression was used to assess the effects of each variable while controlling for the effect of the others. Table 7 presents the results of the multiple regression analysis after stepwise deletion of nonsignificant variables (defined as above .10). As one can see from the table, number of parents in residence was found to be a significant predictor of relapse when assessed simultaneously with the other independent variables. Mother's drug history was also found to be significantly associated with relapse. Father's drug history as well as abuse are reported because they approach significance (p < .09 and p < .07, respectively). These findings indicate that the adolescent residing in a single parent home or with neither parent present, in comparison to those living with both parents, was more at risk to relapse. Those who reported mother as having a history of substance

abuse were also more at risk to relapse. However, this was found for males only (see discussion of gender differences below). Adolescents who reported father as not having a history of substance abuse, as well as those who had experienced physical and/or sexual abuse, appeared to be at a somewhat greater risk to relapse; however, these two variables were not significant at the .05 level. No significant association was found between the cluster variables, genetic/social learning, and family dysfunction, and the dependent variable (PSD).

Table 7. Results of Multiple Regression After Backward Stepwise Deletion of Nonsignificant Independent Variables. Dependent Variable: Pattern Of Drug Use Since Treatment Discharge (PSD).

Independent Variables	Coefficient	p value
Mother Drug History	.77	.05
Father Drug History	-.63	.09
Parents in Residence	.76	.03
Physical/Sexual Abuse	.61	.07
$R^2 = .24$		

Gender Differences. Males and females did not differ significantly in terms of PSD (\bar{x} females = 2.6; \bar{x} males = 2.23; $t = .98$). There was, however, a significant difference found in terms of gender. Table 8 reports the findings from separate simple regression analyses for females and males. As one can see, for males, mother's drug history was significantly associated with PSD. Mother's drug history accounted for 41% of the variance in the

dependent variable (PSD) for males and 0% of the variance for females. This finding indicates that males who reported mother as having a history of drug use were more at risk to relapse. However, because this finding is based on only two males (of the 7 subjects reporting mother as having a substance abuse history, 5 were female and 2 were male) caution is warranted in interpreting this result.

Table 8. Simple Regression For Males and Females.
Dependent Variable: Pattern Since Treatment
Discharge (PSD). Independent Variable:
Mother's Drug History

Gender	Coefficient	F Ratio	R ²
Females	.00	.00	.00
Males	.64	9.80	.41*

* p <.007

CHAPTER V

DISCUSSION

This study proposed to assess genetic, social learning, and family dysfunction theories as explanations for why an adolescent may relapse after substance abuse treatment. The findings partially support the hypotheses tested based on the theories presented.

As proposed from a family therapy perspective, family dysfunction may increase the risk of adolescent relapse. To test this hypothesis, correlates of family dysfunction and their association with pattern of drug use after treatment was assessed. The findings indicated that number of parents in residence did predict relapse. Those adolescents not living with both parents were more at risk to relapse. This supports previous research that has found separation from one or both parents has a negative influenced on treatment outcome (Gordon, 1983; Holsten, 1980). As proposed from a family therapy perspective, divorce can be an indicator of family conflict. This finding suggests that adolescents whose family of origin is characterized by unstable structure, are more at risk to continue drug use after treatment. It may also be that an adolescent living with a single parent, or with neither parent, lacks full parental support through and after treatment. As family therapists posit, the family needs to be involved in the treatment

process for treatment to be successful (Baither, 1978; Textor, 1987).

Even though one can not conclude from the findings that physical and/or sexual abuse is predictive of relapse, it appears to be somewhat associated with relapse and therefore, is an area of concern. One reason for the lack of significant findings may be due to under-reporting of abuse. Only eleven (35.5%) of the 31 subjects reported abuse. In comparison to other studies (e.g., Kaufman and Kaufman 1979; Textor, 1987) the percent who reported abuse was low.

The findings of this study also supported genetic and social learning theories of relapse. As indicated, an association between parental drug abuse and relapse was found. Males who reported mother as having a substance abuse history were more at risk to relapse. This same factor was not found for females. The family data however, were self-report data from the adolescent. There was no reporting by family members to verify the information given by the adolescent.

As discussed above, genetic theory posits that parental history of substance abuse may predispose an adolescent to greater risk of relapse. This greater risk is due to experiencing a more powerful and rewarding physiological effect when the individual uses a drug, and hence, this is theorized to make abstinence more difficult. Given that

mother's drug history (reported by the adolescent) did predict male adolescent relapse, genetic theory of relapse was partially supported in this study. Why this would be true only for males and not females however, and as an outcome of mother's drug history and not fathers, is not clear from a genetic perspective. The association found between father's drug history (specifically non-drug abuse history) and relapse certainly does not support the theory of relapse as proposed by genetic theory. This finding may indicate that a father who does not have personal knowledge of drug abuse is unable to be supportive of the adolescent's drug recovery. Thus, this finding may further demonstrate the critical role family support plays in successful treatment as proposed by family therapists. Even though it is not possible in a study of this kind to distinguish between genetic and social learning theory, it may be that social learning theory better explains the results. Given the lack of research in this area, genetics, although a factor in risk for substance abuse, may not be a factor associated with relapse.

Social learning theory, as discussed, posits that the risk of relapse is greater for an adolescent who has a parent who abuses drugs because that child has learned from the parent that drug use is a way to cope with stress. Relapse thus occurs because the child lacks alternative coping skills and therefore, relies on the parent model -

coping with stress through drug use. Given that it is widely recognized that the female parent is the primary socializing agent (Belsky, Lerner, and Spanier, 1984), it is not surprising to find mother's drug use to be more influential than father's use of substances. In studies which have investigated the relationship between mother and father's drug use and that of the adolescent, mother's drug use has been found to be correlated predominately with the adolescent's use of substances (Thorne and DeBlasse, 1985). Therefore, the finding that mother and not father's drug abuse is associated with relapse is supportive of findings in terms of parental influences on adolescent substance use in general. An explanation of why mother's drug abuse predicted only male adolescent relapse may in part be due to differences in the way males and females experience stress. There is evidence that males are more vulnerable to family stress than females (Gove and Herb, 1974). Thus, because males have an increased vulnerability to experience stress, they may be more likely than their female counterparts to use drugs in response to stressful situations. Caution is warranted however, in interpreting this finding given the small sample size. Of the 31 subjects, only seven reported mother had a history of substance abuse, and of those seven, two were males and the remaining five females.

Given the lack of previous research in assessing familial influences on drug relapse, this was an exploratory

study. The findings from this study suggest that aspects of genetic theory, social learning theory, and family dysfunction theory, may aid in gaining a more thorough understanding of relapse after drug-abuse treatment. The findings further indicate parent-child cross-gender drug use effects in that mother's drug use was found to be significantly associated with only male adolescent relapse.

The major weakness of this study was the small sample size. Also, with subjects from only one treatment center, results of this study must be interpreted with caution. However, these results suggest family variables are predictive of relapse. Familial risk factors found to be associated with relapse were: living with one or neither parent, perceiving father as not abusing substances, experiencing physical and/or sexual abuse, and for males specifically, perceiving mother as having a history of substance abuse.

Given high relapse rates in the treatment of adolescent substance abuse, targeting at the time they enter treatment a sub-population of individuals who are at greater risk to relapse could help in facilitating more positive treatment outcomes. These results suggest this may be possible given an understanding of family dynamics associated with the adolescent. More studies of this kind are certainly called for and the findings need to be replicated before results can be safely generalize beyond this population. It is only

through gaining a comprehensive and thorough understanding of factors which influence relapse that one can hope to diminish the likelihood of relapse occurring.

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