

1-1-1999

Personality and family relationship correlates of drug abstention in adolescents

Jacqueline M. Haskin

Follow this and additional works at: http://digitalcommons.wayne.edu/oa_dissertations

Recommended Citation

Haskin, Jacqueline M., "Personality and family relationship correlates of drug abstention in adolescents" (1999). *Wayne State University Dissertations*. Paper 1263.

This Open Access Dissertation is brought to you for free and open access by DigitalCommons@WayneState. It has been accepted for inclusion in Wayne State University Dissertations by an authorized administrator of DigitalCommons@WayneState.

PERSONALITY AND FAMILY RELATIONSHIP CORRELATES
OF DRUG ABSTENTION IN ADOLESCENTS

by

JACQUELINE M. HASKIN

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

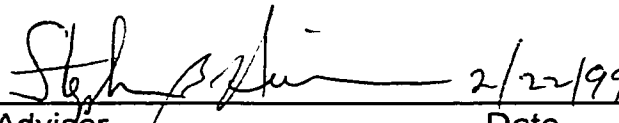
in partial fulfillment of the requirements

for the degree of

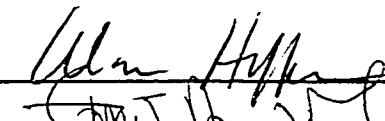
DOCTOR OF PHILOSOPHY


1999

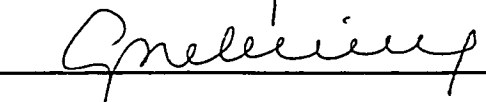
MAJOR: EDUCATIONAL PSYCHOLOGY



Adviser Date







© COPYRIGHT BY
JACQUELINE M. HASKIN
1999
All Rights Reserved

DEDICATION

This manuscript is dedicated to my husband, Dale, and my children, Brian, Jennifer, and Cynthia for their never wavering support and encouragement. It is further dedicated to the memories of my parents, Armand and Viola Moreau, who nurtured in me a love of learning and a desire for academic achievement.

ACKNOWLEDGEMENTS

This project would never have been completed if it were not for the cooperation of the principal, Jerry Perttunen, the senior class advisor, Kay Paupore, and the graduating seniors at the high school where the study was conducted. The principal and senior advisor graciously allowed the survey to be run in their school at a time when school administrators are increasingly reluctant to participate in such projects. They provided mailing labels and school letterhead stationery for the parent consent forms, access to the auditorium prior to the study so that the logistics of administration could be planned, and additional school staff to lend authority during the survey. The students were polite, cooperative and took their role in the project seriously.

I would like to express my gratitude to my husband Dale, and to my friends, Walter Bothwell, Karen Cogswell, Brooke Heitkamp, Janet and Richard Lefstad, Lee Meadow, Mac Milne, Richard Popp, June Thombs, and Sherry Wright for their contribution as research assistants. A special thank you is extended to Richard Popp for arranging for the school's participation and for motivating the students on the day of the survey, and to June Cline for her invaluable assistance with the statistical analysis of the data.

I also want to extend my appreciation to my committee members, Dr. Guy Doyal, Dr. Alan Hoffman, and Dr. Gisela Labouvie-Vief for their thoughtful review and helpful suggestions, and to my mentor, Dr. Stephen Hillman, whose patience, encouragement, and assistance were invaluable.

TABLE OF CONTENTS

DEDICATION	ii
ACKNOWLEDGEMENTS	iii
LIST OF TABLES	vii
LIST OF FIGURES.	ix
CHAPTER I – INTRODUCTION	1
Background	1
Personality Differences on the Continuum of Drug Involvement	2
Family Variables	4
Statement of the Problem.	6
Significance of the Research	7
CHAPTER II - REVIEW OF THE LITERATURE	9
Adolescent Development	9
Problem-Behavior Theory.	12
Personality Trait Theory and Problem Behavior	17
Personality Structure and Substance Related Behaviors.	21
Family Relationships/Systems Theory	25
Family Factors and Substance Use, Abuse, and Abstention in Adolescence	30
Abstention.	36
Hypotheses	38
CHAPTER III - METHODOLOGY	41

Introduction	41
Participants	41
Procedures	41
Instrumentation	44
Data Analysis	49
Chapter IV - RESULTS OF DATA ANALYSIS	52
Demographic and Substance Use Variables	52
Description of Continuous Variables	84
Research Hypotheses	87
Summary	95
Chapter V - SUMMARY, DISCUSSION AND CONCLUSIONS	96
Demographic Factors and the Level of Substance Use	96
Discussion of the Hypotheses	97
Conclusions.	102
Limitations of Study	104
Suggestions for Further Research	105
Implications of Findings.	105
APPENDIX A Consent Form	107
APPENDIX B Agreement to Participate Form	109
APPENDIX C Tridimensional Personality Questionnaire.	110
APPENDIX D Personal Background and Substance Use Questionnaire. . .	117
APPENDIX E.	123
REFERENCES.	127

ABSTRACT	143
AUTOBIOGRAPHICAL STATEMENT	145

LIST OF TABLES

Table		
01	Frequency Distributions - Students by Substance Use Category. . . .	53
02	Crosstabulation - Gender by Substance Use Category.	54
03	One-way Analysis of Variance - Age of Students.	55
04	Descriptive Statistics - Age of Students by Substance Use Category	55
05	One-way Analysis of Variance - Self-Reported Grade Point Average of Students	56
06	Descriptive Statistics - Self-Reported Grade Point Average of Students by Substance Use Category	57
07	Crosstabulation - Ethnicity by Substance Use Category	58
08	Crosstabulation - Religion of Student by Substance Use Category . .	59
09	Crosstabulation - Frequency of Attendance at Religious Services or Activities by Substance Use Category	61
10	Crosstabulation - Importance of Religion by Substance Use Category	63
11	Crosstabulation - Frequency of Listening to/Watching Religious Programs on Radio or Television by Substance Use Category.	65
12	Crosstabulation - Father's Occupation by Substance Use Category . .	67
13	Crosstabulation - Mother's Occupation by Substance Use Category. .	70
14	Crosstabulation - Father's Education Level by Substance Use Category	73
15	Crosstabulation - Mother's Education Level by Substance Use Category	75
16	Crosstabulation - Family Socioeconomic Status by Substance Use Category	77
17	Crosstabulation - Who Participants Lived With At the Time of the	

	Study by Substance Use Category	78
18	Crosstabulation - Who Participants Lived With Most During High School by Substance Use Category	80
19	Crosstabulation - Does Student Consider Anyone in Family to be an Alcoholic or Substance Abuser by Substance Use Category	83
20	Descriptive Statistics - Attitude Toward Parents by Substance Use Category	84
21	Descriptive Statistics - Personality Dimensions by Substance Use Category	86
22	Multiple Analysis of Variance - Personality Variations by Substance Use Category	88
23	Univariate F Tests - Personality Variations by Substance Use Category	89
24	One-way Analysis of Variance - Attitude Toward Father by Substance Use Category	91
25	One-way Analysis of Variance - Attitude Toward Mother by Substance Use Category	92
26	Frequency Distribution - Student Groupings	93
27	One-Way Analysis of Variance - Degree of Substance Use by Attitudes Toward Parents	94
28	Descriptive Statistics - Parent Attitude Groupings	94

LIST OF FIGURES

Figure

1	Statistical Analysis	50
---	--------------------------------	----

Chapter I

INTRODUCTION

Background

The past two decades have produced a comprehensive body of literature on drug abuse among adolescents. The general consensus is that drug abuse is escalating among this age group. Society as a whole has become increasingly aware of the almost epidemic level of potentially serious problems linked to the excessive use of drugs: involvement in dangerous driving situations (Farrow, 1987), sexual precocity leading to premature pregnancies and exposure to sexually transmitted diseases (Jessor, 1987), increased involvement in antisocial behaviors such as lying, stealing, vandalism, and physical aggression against others (Lewis & Lewis, 1984; Windle, 1990), and school related problems such as poor performance and truancy (Jessor, 1987; Kandel, 1980; Windle, 1993).

Considerable research has been devoted to studying and distinguishing between the causes and correlates of drug use and abuse from several different research perspectives: *Anomie Theory* (Merton, 1957), *Double-Failure Hypothesis* (Cloward & Ohlin, 1960), *Craving Theory* (Lindesmith, 1968), *Tension Reduction Theory* (Cappell, 1975; Cappell & Herman, 1972), *Personality Theory* (Cox, 1987; Mayer, 1988), *Social Learning Theory* (Akers, 1977; Akers, Krohn, Lanza-Kaduce, & Radosevich, 1979; Christiansen, Goldman, & Inn, 1982; Collins, & Marlatt, 1981), *Problem Behavior Theory* (Donovan & Jessor, 1985; Jessor, 1993), *Expectancy Theory* (Goldman, Brown,

& Christiansen, 1987), *Developmental Theory* (Huba & Bentler, 1982; Kandel, Kessler, & Margulies, 1978), and *Biopsychosocial Theory* (Irwin & Millstein, 1986). The trend in this research has been from sociological theories that specifically address drug involvement to social-psychological models that explain drug related behavior in terms of the interaction of environmental and individual dynamics.

Results have shown that heightened levels of interpersonal alienation (Shedler & Block, 1990), family conflict (Jessor, 1987), hostility, impulsivity, depression (MacKay, 1961), dominance (Jones, 1968), expectancies (Christiansen, Smith, Roehling, & Goldman, 1989), and high levels of general sensation seeking behavior (Andrucci, Archer, Pancoast, & Gordon, 1989; Arnett, 1996; Ball, Carroll, & Rounsaville, 1994; Galizio, Rosenthal, & Stein, 1983; Newcomb, & McGee, 1991; Schwarz, Burkhart, & Green, 1978) significantly correlate with the misuse of substances.

What has also emerged from this research is the awareness that there is a continuum of adolescent involvement with drugs from abstention, to occasional use, to abuse, and the recognition that the extreme behaviors of abuse and abstention are signals of underlying emotional problems while occasional use is apparently a manifestation of developmentally appropriate experimentation (Jessor & Jessor, 1975; Jones, 1968, 1971; Newcomb & Bentler, 1988; Shedler & Block, 1990).

Personality Differences on the Continuum of Drug Involvement

In a longitudinal study on adolescent drug use and psychological health,

Shedler and Block (1990) found that "The picture of the frequent user that emerges is one of a troubled adolescent, an adolescent who is interpersonally alienated, emotionally withdrawn, and manifestly unhappy, and who expresses his or her maladjustment through undercontrolled, overtly antisocial behavior", and "the picture of the abstainer that emerges is of a relatively tense, overcontrolled, emotionally constricted individual who is somewhat socially isolated and lacking in interpersonal skills" (pp. 617-618).

The Shedler and Block (1990) study used data collected in the Block and Block (1980) longitudinal inquiry by panels of psychologists using a Q-Sort method of sorting 100 personality-descriptive statements into a fixed, nine-step distribution. The data were collected over a span of 15 years at ages 3, 4, 5, 7, 11, 14, and 18. Shedler and Block found that psychological maladjustment of both the abusers and the abstainers predates adolescence and predates initiation of drug use. As early as age 7, the frequent users were described as unable to form healthy social relationships, as insecure, impulsive, and undependable, as hostile, distrustful, and intolerant of authority, and as exhibiting numerous signs of emotional distress, while the abstainers were described as anxious, inhibited, overcontrolled, immobilized under stress, not able to enjoy sensuous experiences, timid, and fearful. Although the Shedler and Block (1990) study addressed a variety of substances including marijuana, inhalants, cocaine, hallucinogens, barbiturates, amphetamines, tranquilizers, and heroin, its results closely paralleled the Jones' s (1968; 1971) studies that focused only on alcohol two decades earlier in terms of the personality attributes

that characterize abusers and abstainers.

Support for the Shedler and Block (1990) and Jones (1968; 1971) results on personality differences between the two groups is found in work by Cloninger, Sigvardsson, and Bohman (1988); Cloninger, Przybeck, and Svrakic (1991); and Cloninger, Sigvardsson, Przybeck, and Svrakic (1995) on personality correlates of alcohol abuse. Using the Tridimensional Personality Questionnaire, Cloninger, Sigvardsson, and Bohman (1988) tested 431 eleven year olds and identified three dimensions of childhood personality variation--*novelty-seeking*, *harm avoidance*, and *reward dependence* that were predictive of later alcohol abuse. Specifically, high novelty-seeking, low harm avoidance, and low reward dependence scores predicted early-onset (Type II) alcohol abusers. Cloninger, et al.'s (1988) description of these children was very similar to Shedler and Block's (1990) description of the adolescent substance abuser as unable to sustain healthy social relationships, easily provoked, insecure, impulsive, undependable, and hostile. This study inferred that the opposite profile--low novelty-seeking, high harm avoidance, and high reward dependence scores can be used to predict adolescent abstainers. Cloninger et al.'s description of these children as rigid, patient, inactive, fearful, and over inhibited was very similar to Shedler and Block's description of adolescents who had never experimented with any drug.

Family Variables

Interestingly, Shedler and Block (1990) found that the mothers of both abstainers and abusers exhibited very similar behavior profiles. Compared with

mothers of experimenters, mothers of both abstainers and abusers were described as cold and unresponsive, as unable to offer their child encouragement while at the same time pressuring for performance, as critical and rejecting, and as making the joint task assignment a "grim and unenjoyable" experience. The fathers of abstainers and abusers, on the other hand, presented markedly different patterns of behavior. Fathers of abusers were very similar to those of experimenters while fathers of abstainers were described as authoritarian and domineering, as prone to squelch spontaneity and creativity, as appearing to not enjoy being with their children, as turning the joint task assignment into a chore, and as demanding that things be done their way.

While the question of why abstainers and abusers develop such different personalities has yet to be satisfactorily answered, the data in Shedler and Block's study (1990) suggested that fathers play a pivotal role in this difference. Support for this conclusion is found in an earlier study conducted by Kandel, Kessler, and Margulies (1978). These researchers looked at four clusters of predictor variables: *parental influences*, *peer influences*, *adolescent involvement in various activities*, and *adolescent beliefs and values* as social/psychological antecedents of entry into three stages of adolescent drug use: hard liquor, marijuana, and other illicit drugs. They found that "at all three stages, the quality of interaction with fathers assumes greater importance than the quality of interaction with mothers" (p. 36).

While both the Shedler and Block (1990), and the Kandel, Kessler, and Margulies (1978) studies recognized the crucial role that the fathers play in this

scenario, they presented no further analysis. They did however, offer hypotheses as to why this may be so. Shedler and Block suggested that the abstainers' fathers' stern, autocratic manner "provided a model for dealing with...anxiety" and that "the children internalized their fathers' attitudes" (p. 627). Kandel, Kessler, and Margulies (1978) agreed with Nye (1958) that "this comes about because of the greater differentiation of adolescents' relationships to fathers as compared to mothers" (Kandel et al. 1978, p. 36).

In other words, one set of researchers hypothesized that abstainers accept and internalize their father's values and therefore by inference do not manifest significant relationship problems with their father, and the other set of researchers posited that abusers reject and differentiate themselves from their father's attitudes and therefore by inference do manifest significant relationship problems with their father.

Statement of the Problem

While the overt, acting out negativity of the substance abuser represents far greater pathology and presents a much more pressing and immediate problem to society in general, the covert, internalizing restrictiveness of the total abstainer is none the less serious. Internalizing problems are easier for society as a whole to live with, but they portend a life of social isolation, restriction, fear, anxiety, and depression for the individual who is affected, and there is some recent evidence that people with this personality profile are in danger of developing late-onset (Type I) alcoholism, that is, after the age of 50 (Cloninger, Sigvardsson, & Bohman, 1988; Cloninger, Sigvardsson, Przybeck, & Svrakic,

1995). In spite of such research evidence, these children are universally underserved in our schools. So much so, that their behavior is erroneously seen as the *ideal* in such campaigns as "Just Say No." Because of this mindset, almost all of the work on substance related behavior in adolescents has focused on the correlates and antecedents of abuse. Abstention in this same age group has been virtually ignored.

In summary, information on abstention has been a byproduct of substance use/abuse literature. Although it has been identified as a factor in a broader psychosocial maladjustment profile, it has not been the focus of research attention. There is ample indirect evidence in the literature for a relationship between total substance abstention in adolescents and a tridimensional personality type characterized by low levels of novelty-seeking behavior, and high levels of harm avoidance and reward dependence. There is also considerable indirect support for a relationship between abstention in adolescents and low levels of relationship problems with the father figure.

Significance of the Research

This study examined adolescents during their senior year, a time when research indicates that some level of drug experimentation or use may be a manifestation of normal adolescent development rather than a symptom of an abnormal process (Baumrind, 1985; Jessor, 1982; Jessor & Jessor, 1975, 1977; Shedler & Block, 1990). Using the level of substance involvement as a predictor of adjustment, abstainers, users, and abusers were compared on personality and family relationship variables. Levels of adjustment were evaluated in terms

of the Tridimensional Personality characteristics of novelty-seeking, harm avoidance, and reward dependence and the level of relationship problems with the father independent of the level of relationship problems with the mother. Additional information was gathered on demographic and background factors that past research has found to correlate with adolescent involvement with substances.

The findings of this research have significance for therapists, researchers, and educators who are interested in identifying here-to-fore unrecognized psychosocial pathology in adolescents. It has been assumed that the relationship between the level of drug use and measures of psychosocial disturbance is linear. Under this assumption, both use and abuse are considered problematic while complete abstention is viewed as ideal. Current research, however, is showing that normal adolescent behavior involves some level of experimentation with drugs. The present study should help shift the focus of researchers, educators, and counselors from the assumption that pathology is linearly related to substance use/abuse to the understanding that pathology actually shows a "U-shaped" relationship to the extremes of abstention and abuse (Shedler & Block, 1990). Understanding that abstention is symptomatic of a broader maladjustment profile will lay the groundwork for appropriate intervention. While not a longitudinal design, this study will provide data to either support or refute research that has found abstention to be indicative of psychosocial maladjustment in adolescence.

CHAPTER II

REVIEW OF THE LITERATURE

The theoretical and empirical bases for this research project are presented in a review of the adolescent development process, problem-behavior theory, personality trait theory, and family relationships/theory as they pertain to substance related behaviors in adolescence. In addition to a review of specific research variables, a description of information and theories that bear a broader relevance and relationship to this study is provided. The nature of abstention behaviors is discussed in terms of adults as well as adolescents. Specific attention is given to studies that identify personality and family factors as antecedents to the development of substance related behaviors in adolescence.

Adolescent Development

Adolescence is that developmental period that extends from the beginning of sexual maturity to the achievement of independent adult status. It is characterized by pervasive changes, conversions, reorganizations, and integrations across multiple levels of behavior in all of the developmental domains, including cognitive, biological, psychosocial, and psychosexual. The result of this transition process is the transformation of the child into an adult, not simply in terms of chronologically defined status, but in terms of behaviorally, socially, and personally defined statuses from student to employee, dependence to autonomy, abstainer to drinker, and from celibacy to sexual intimacy (Jessor, 1982, 1991, 1993; Jessor, Donovan, & Costa, 1991; Kazdin, 1993; Petersen, 1988).

Inherent within this transition process is the concept of movement defined as an actively pursued, purposeful, self-directed exploration of new experiences, new behaviors, and new roles as opposed to a passively experienced, biologically driven metamorphosis. Jessor (1982) states that at the end of this movement through the transition process, adolescents "will have arrived at a different psychosocial 'place', one that is socially-defined and socially-recognized, that was personally sought after and can now be asserted, that carries with it new entitlement and opportunities and that entails new demands and obligations. When such a 'destination' has been reached, it makes sense to speak of developmental transition having occurred" (p. 296).

There is ample evidence in the literature that this movement toward adult behavior patterns is occurring increasingly early in the adolescent years. In their annual surveys of drug use among secondary students from 1975-1994, Johnston, O'Malley, and Bachman (1995) document a pattern of increasing substance abuse in progressively younger adolescents. Wilks and Callan (1990) report that some children have had their first experience with drugs by the time they are 10. Irwin (1989) reports that the mean self-reported age of onset for alcohol use is 12.6 years and for cigarette use, 12.0 years. Kandel and Logan (1984) state that initial use of marijuana is most likely to occur at age 13, and Schinke (1984), Irwin (1989), and Zelnik and Kantner (1980) each report that the first experience with sexual intercourse occurs by age 15. Webb, Baer, Caid, McLaughlin, and McKelvey (1991) found that by the time adolescents reach the seventh grade, 26% report drinking alcohol at least once a month. By the time

they have reached their senior year in high school, 90% report some level of alcohol use (Johnston, O'Malley, & Bachman, 1993), 12% report smoking at least one-half pack of cigarettes a day, 15% report drinking 5 or more successive drinks at least 3 times in a 2 week period, 5% report using marijuana regularly, and 3% report using cocaine frequently (Dryfoos, 1990). The crucial feature of these behaviors is that they do not occur in isolation. There is substantial co-variation among them such that they tend to cluster and co-occur within the same adolescent (Jessor 1982) .

While experimentation with these adult activities has been found to be a normal part of adolescence (Clayton, 1992; Jessor & Jessor, 1975, 1977; Jones, 1968, 1971; Jones & Heaven, 1998; Newcomb & Bentler, 1988; Petraitis, Flay, & Miller, 1995; Shedler & Block, 1990), premature entry into these behaviors portends dire psychological and developmental sequelae. Milman, Bennett, and Hanson (1993) state that these young people "emerge from adolescence without having experienced it, without having addressed its tasks, without being able to carry into adulthood the legacy of conflicts resolved, obstacles overcome, fears conquered, social skills mastered, values defined, and relationships established" (p.53). They suffer psychosocial penalties from which they are not likely to recover. Multiple substance use during the early adolescent years is associated with disturbed emotional functioning, impaired interpersonal relationships, and academic problems/failure which are in turn associated with increased involvement in criminal activities, health problems, job instability, marital problems, and poor parenting skills in the adult years (Kandel, 1990; Newcomb

& Bentler, 1988; Palmer & Liddle, 1996).

If those children who engage in adult activities prematurely are at risk for seriously interrupting their development in terms of missing out on crucial steps, would not the opposite also be true? That is, if accelerated movement through the process is hazardous, would not restricted movement also carry risk, the risk of not resolving age-appropriate tasks by dint of having avoided age-appropriate experimentation? Theories that assume a linear relationship between substance involvement and adolescent psychosocial problems do not address this question. They account for the pathology associated with substance abuse but *not* for that associated with abstention. This is because they conceptualize adolescent psychosocial pathology in terms of *deviation from* the normal path toward problematic behaviors instead of in terms of *acceleration within* that path toward socially accepted adult behaviors. What is needed is a theoretical model that views adolescent development in this manner and accounts for the "U-shaped" relationship of adolescent psychosocial pathology to the extremes of abstention and abuse as first documented in the Shedler and Block (1990) and Jones (1968; 1971) studies. Such a model is addressed in the next section.

Problem-Behavior Theory

Problem-Behavior Theory (PBT) was developed by Jessor and Jessor (1977). Its theoretical framework derived from longitudinal studies on the socialization of problem behavior in adolescents in which samples of junior and senior high students and college freshmen were tested at yearly intervals over four year periods (Jessor, Graves, Hanson, & Jessor, 1968; Jessor & Jessor,

1975, 1977; Jessor, Jessor, & Finney, 1973). Begun as an attempt to explain adolescent alcohol use and abuse, the model was expanded to include other problematic behaviors such as cigarette smoking, illicit drug use, precocious sexual activity, activist protest, and conventional behaviors such as church attendance and academic performance. It thus became a social-psychological framework for explaining developmental transitions of adolescence. The theory has been supported in subsequent studies (Donovan, & Jessor, 1985), replicated, and shown to have stability over time (Donovan, Jessor, & Costa, 1988; Farrell, Danish, & Howard, 1992; Newcomb & McGee, 1991).

According to this theory, conventional and problematic behaviors are driven by interaction among three major systems: *personality*, the *perceived environment*, and *behavior*. Whether a behavior is considered problematic depends upon social definition rather than upon any quality intrinsic to the behavior itself. For example, activities such as alcohol and drug use, cigarette smoking, and sexual intercourse are routinely performed by adults but are considered problematic if performed before adult status is reached. It is the premature engagement in these activities that warrants the label problematic. "For the adolescent age group, the term problem behavior refers to those behaviors that are socially-defined as a problem, that is, as inappropriate or undesirable, by the larger society and the institutions of adult authority. They are behaviors that depart from the regulatory norms, either legal or social, that are conventionally applied to this age group. Finally they are behaviors that can be expected to elicit some kind of social control response from the larger society

when they occur, whether it is as minor as verbal disapproval or as extreme as arrest and incarceration. In contemporary American society, there is a fair consensus about what constitutes problem behavior among adolescents and the younger the adolescents concerned the stronger the consensus" (Jessor, 1982, p. 296).

These behaviors, therefore, are *age-graded*. Since they represent a more mature status in the culture as a whole, engaging in these behaviors acts to affirm the attainment of adulthood. As such, they play a key role in the developmental transitions of adolescents. Within the normal adolescent developmental trajectory, problematic behaviors can be purposeful, meaningful, goal-oriented and functional. They can serve to indicate adult status, help achieve goals that are otherwise impeded, furnish a vehicle for expressing opposition to conventional society, provide a way of coping with anxiety, facilitate solidarity with peers, confirm attributes of personal identity such as "sexy", "macho", or "cool", and serve as a transition marker (Jessor, 1982).

To test their hypothesis that engaging in problematic behaviors is an integral aspect of adolescent development, Jessor and Jessor (1975) studied 432 junior high school students over a period of four years. The major requirement of the study was to identify groups of abstainers at the first of four yearly testings and map their transition to drinker status. A fifty page questionnaire consisting of pre-tested psychometrically developed scales validated in previous research (Jessor, Graves, Hanson, & Jessor, 1968) was used to map changes taking place concurrently in the three systems that make

up the model's theoretical framework—personality, the perceived social environment, and behavior.

Five groups were identified—those who were drinking when the study began, those who began drinking the second year, the third year, and the fourth year, and those who remained in the abstention group. Students who were drinking when the study began scored the highest on a tendency toward deviance, those who did not make the transition from abstention to drinking status during the four years of the study scored the highest on an orientation toward conventionality, and the groups in between were perfectly ordered with regard to the time of their transition.

The onset of other possible transition-marking behaviors such as the use of marijuana, sexual intercourse, activist protest participation, and problem drinking was also determined. With the exception of activist protest participation, the percentage of involvement in these other problematic behaviors showed the same orderly increase within the onset groups, and was found to be directly related to the length of time since the onset of drinking. The Jessors concluded that the degree of psychosocial readiness to partake in these problematic behaviors is the indication of a normal aspect of adolescent development they called *transition proneness*, and that the general movement in the adolescent transition is away from conventionality. Their results also showed that abstainers resist the normal transition away from conventionality in all three of the models systems—behavior, personality, and perceived environment.

In the behavior system measures, abstainers reported greater church

attendance, higher academic interest and achievement, and lesser involvement in generally deviant behaviors such as lying, stealing, cheating, and aggression than did those students who made the transition to drinker status at some point during the four year study. In the perceived social environment system measures, abstainers reported a higher compatibility between views of friends and parents, greater influence of parents than of friends, greater parental support and controls, and greater parental disapproval of drinking and other problematic behaviors than did drinkers. In the personality system measures, abstainers reported a higher value on achievement, lower value on independence, lower levels of social criticism and alienation against society, higher attitudinal intolerance of deviant behaviors, and higher religiosity (Jessor & Jessor, 1975).

Several studies subsequently supported Jessor's contention that psychosocial conventionality is associated with fewer problematic behaviors such as substance use and delinquency and greater involvement in socially approved behaviors such as regular church attendance and high academic performance, and that the opposite relationship is true for psychosocial unconventionality. Donovan, Jessor, and Costa (1991) and Jessor, Turbin, and Costa (1998) found an association between conventionality and regular involvement in positive health behaviors such as regular physical activity, seat belt use, and healthy diet and less involvement in problematic behaviors such as substance use and delinquent activities. Kandel, (1982, 1990) found that alienation from dominant social values was positively associated with drug use

and delinquency, Shedler and Block (1990) found that substance abuse is more common among adolescents who show a pattern of unconventionality manifested in nonconforming, independent, and alienated attitudes, and Brook, Brook, Gordon, Whiteman, and Cohen (1990) found that adolescent conventionality acts as a strong protective mechanism against involvement with drugs.

While it can be inferred from the above descriptions that abstainers are characterized by low levels of novelty-seeking behavior, high levels of harm avoidance and reward dependence, and low levels of relationship problems with parental figures, there is no direct support for such a conclusion. The exact structure of the factors within each of the model's systems was not addressed.

In summary, the comprehensive psychosocial model of adolescent development proposed by the Jessor (1975, 1977) has reframed adolescent problem behaviors, such as substance use/abuse, as commonly accepted adult behaviors toward which adolescents are moving at different rates. It has also provided evidence for a relationship between personality and parent/adolescent relationship antecedents and the range of involvement with substances from abstention to abuse. The specific structure of the personality and parent/adolescent factors, however, has not been established. These domains are explored in the following sections.

Personality Trait Theory and Problem Behavior

Trait theory emerged as an effort to describe personality development in terms of enduring, observable personality dispositions which can be objectively

measured rather than to explain personality development in terms of unconscious, conflict generated motivations which must be inferred. This theory originated when Allport and Odbert (1936) searched an unabridged dictionary for terms used to describe people. Their initial list of 18,000 words was refined to between 4,000 and 5,000 by eliminating words which are used to either evaluate character or describe temporary states. Allport (1937, 1955, 1961, 1966) then continued to refine his ideas and organize this list into a hierarchy of traits consisting of *cardinal traits* which dominate some personalities, *central traits* which contribute heavily to behavior, and *secondary traits* which exert the lesser influence. This idiographic concept that a person's personality consists of idiosyncratically arranged individual traits dominated trait theory in the early years of its development and laid the groundwork for research linking individual traits with specific problematic behaviors (Wortman, Loftus, & Marshall, 1988).

Applying this idiographic concept to adolescent alcohol abuse, MacKay (1961) found that hostility, dependency, poor impulse control, and depression play a significant role in the misuse of alcohol by adolescents. Huba and Bentler (1982) found evidence that extroversion, liberalism, leadership, non-conventionality, non-compliance with the law, lack of diligence, and lack of deliberateness are related to drug use, and Swaim, Oetting, Edwards, and Beauvais (1989) found that the one personality variable that is consistently associated with adolescent drug use is anger.

Although trait theory at this point represented a major step toward objectively identifying individual traits and relating them to certain behaviors, the

long list of descriptive terms was cumbersome to use and did not reveal cogent profiles from which predictions could consistently be made. A more universal, nomothetic paradigm was needed (Wortman, Loftus, & Marshall, 1988).

A noted conceptual advance occurred when researchers turned to factor analysis, a statistical method that sorts out clusters of closely related traits and reduces them to a smaller number of distinctly different factors. While the exact number and identity of these basic structural factors is still under debate, the results of most of this research to date holds that personality can best be described with 3 to 7 factor models (Cloninger, 1987a; Cloninger, Svrakic, & Przybeck, 1993; Eysenck, 1991; Digman, 1990; Costa & McCrae, 1992; McCrae & Costa, 1997). This theoretical advance in trait theory provided a basis not only for the evaluation of the basic dimensional structure of personality, but for the prediction of probable problematic or adaptive behaviors associated with specific personality profiles. A dimensional approach allows for ratings that are equally predictive of behaviors along a continuum that includes extremes (i.e., abstention and abuse or pro-social and anti-social behaviors).

Early investigations into the relationship between pre-existing personality structure and substance abuse began with the fortuitous location of MMPI profiles which had been administered to the subjects years before they became heavy alcohol or drug abusers. In one such study, Loper, Kammeier, and Hoffman (1973) compared the MMPI profiles of 32 adult males who had been hospitalized for alcoholism with those of 148 classmates who had not developed alcoholism and found several significant differences on the *Pd* (Psychopathic

deviate), and *Ma* (Mania) scales. At the time of the original testing, the pre-alcoholic males were more in conflict with authority and less conforming, more gregarious and impulsive and less socially maladjusted than their classmates who did not develop alcoholism. In a similar study using previously administered MMPI profiles of 33 Carnegie Institute of Technology students who became substance abusers and 33 MMPI profiles of their peers who did not become substance abusers, Goldstein and Sappington (1977) found significant differences between the groups on the *Hy* (Hysteria), *Pd* (Psychopathic deviate), and *Ma* (Mania) scales. The abuser group was characterized by "resistance to societal limits...extroverted, socially skillful deportment, aggressiveness, some lack of academic motivation, vague goals, father conflict, and actualization of sexual impulses" (p. 409), while control subjects were characterized by "achievement and study orientation, father-dominated family, lack of social skills, vacillation, and immaturity...and less proclivity toward defiance of rules or risk taking" (p. 409).

Both of these studies raised the possibility of an antecedent multi-factor personality configuration which may predict the level of later substance involvement. Support for this conclusion is found in subsequent research by Wingard, Huba, and Bentler (1979). These researchers divided a total sample of 1634 7th, 8th, and 9th grade students into 2 samples by random assignment. Each participant completed a 13 item questionnaire to assess the degree of use of a variety of substances and 26 scales of the Bentler Psychological Inventory (BPI) to identify primary content dimensions of personality, interests and

attitudes. The data from the drug use and personality domains were interrelated using canonical correlation analysis. Then a combined use of canonical rotation and cross-validation revealed that general substance use was *not* associated with a single personality trait, but rather with a cluster of personality traits and attitudes including "non-abidance with the law, extroversion, liberalism, leadership, lack of diligence, and lack of deliberateness" (p.140). Wingard, et al. (1979) characterized these personality traits in terms of the unifying theme of non-conventionality, an interpretation strongly supported in subsequent research (Bachman, O'Malley, & Johnston, 1981; Brook, Brook, Gordon, Whiteman, & Cohen, 1990); Donovan & Jessor, 1985; Donovan, Jessor, & Costa, 1991; Hart, 1995; Huba & Bentler, 1984; Jessor, 1982; Jessor, Donovan, & Costa, 1991; Jones & Heaven, 1998; Kandel, 1990; Wills, McNamara, Vaccaro, & Hirky, 1996).

In sum, the theoretical advance in trait theory from idiographic to nomothetic techniques has provided for the identification of cogent, universal personality structures which can be used to predict specific behavior profiles. The role that universal dimensional structures of personality play with regard to specific levels of adolescent alcohol/drug involvement is explored in the next section.

Personality Structure and Substance Related Behaviors

Using factor analysis of traits observed initially in adults and convergent clinical, genetic, neurophysiological, and neuropsychopharmacological findings, Cloninger (1986; 1987a) developed a testable psychobiological model of the

basic, heritable structure of personality. Three independently inherited dimensions representing variation in underlying neurogenetic systems were identified: novelty seeking, harm avoidance, and reward dependence. Cloninger hypothesizes that novelty seeking is characterized by a proclivity for exploratory behavior and intense excitement that has its basis in low basal dopaminergic activity, that harm avoidance is distinguished by intense reactivity to aversive stimuli that originates with high serotonergic activity, and that reward dependence is identified by marked response to signals of reward or relief from punishment and is a reflection of low basal noradrenergic activity. These dimensions are defined in terms of their basic stimulus-response characteristics such that each underlying neurogenetic system acts to facilitate learning and maintain behaviors which are consistent with that particular system (Cloninger, 1986, 1987a).

The theory was operationalized in the Tridimensional Personality Questionnaire (TPQ), a self-report, 100 true-false item instrument comprised of three scales that assess the three behavioral domains represented in the theoretical model (Cloninger, 1987b). Nixon and Parsons (1989) examined the test's psychometric properties by assessing intercorrelations among the three scales and the test's construct validity by analyzing the scores for each dimension with respect to gender, academic major, GPAs, and abstraction test scores in a sample of 225 male and female college students. Their results supported Cloninger's theoretical conceptualizations of three independent personality dimensions--novelty seeking, harm avoidance, and reward

dependency. In a study of 2680 adult Australian twin pairs, Heath, Cloninger, and Martin (1994) found these dimensions to be genetically homogeneous and independent of each other with heritability accounting for 54 to 61% of the stable variation in these traits.

To test the role of these postulated heritable personality traits in susceptibility to alcohol abuse, Cloninger, Sigvardsson, and Bohman (1988) examined 431 children (233 boys, 198 girls) born in Stockholm, Sweden. A detailed behavioral assessment was made at the age of 11 based on a semistructured interview with their teachers and information from their school grade reports and school health cards. The study participants were studied through the age of 27 and evaluations of alcohol abuse were identified "by means of registrations with the Temperance boards, arrests for drunkenness or driving while intoxicated, treatment for alcoholism or its complications, or a psychiatric diagnosis of alcoholism" (p. 499). Factor analysis confirmed that the dimensions were largely uncorrelated with each other and logistic regression analyses successfully predicted adult alcohol abuse from the childhood personality ratings. "Absolute deviations from the mean of each of the three personality dimensions were associated with an exponential increase in the risk of later alcohol abuse" (p.240). Their results showed that a profile high in novelty seeking and low in harm avoidance was the strongest predictor of early-onset (Type II) alcohol abuse. These results were confirmed in a later study by Wills, Vaccaro, and McNamara (1994) which showed that a personality profile high in novelty seeking, low in harm avoidance, and low in reward dependence was

particularly elevated in adolescents who use tobacco, alcohol, and marijuana. Further support was found in a study by Earlywine, Finn, Peterson, and Pihl (1992) which showed that these same Tridimensional Personality Questionnaire dimensions correlated with other personality, and quantity/frequency measures of alcohol use and abuse.

While the focus of these studies is on the profile associated with early-onset alcoholism and substance use, Cloninger et al. (1988) posited that the opposite profile of high harm avoidance, low novelty seeking, and high reward dependency would inhibit alcohol seeking behavior.

In sum, there is ample hard evidence in the literature for a relationship between early-onset alcohol and substance use/abuse and a low harm avoidance, high novelty seeking, and low reward dependence personality profile. There is also significant inferential evidence for an association between abstention and the opposite profile of high harm avoidance, low novelty seeking, and high reward dependence (Cloninger, Sigvardsson, & Bohman, 1988; Cloninger, Sigvardsson, Przybeck, & Svrakic, 1995; Wills, Vaccaro, & McNamara, 1994). It is the purpose of this study to demonstrate this relationship.

Family influences comprise the second variable related to level of adolescent involvement with substances identified in the original Shedler and Block (1990) and Jones (1968; 1971) studies and in subsequent studies by Barnes (1990), Baumrind (1985, 1991), Brook, Brook, Gordon, Whiteman, and Cohen (1990), Hawkins, Catalano, and Miller (1992), Hoffmann and Johnson (1998), Majumder, Moss, and Murrelle (1998), Ratti, Humphrey, and Lyons

(1996), and Stice and Gonzales (1998). Family influences are also a component variable in the perceived social environment system in Jessor's three system theoretical framework (Jessor, 1991, 1993; Jessor & Jessor, 1975, 1977). They are explored in the following section.

Family Relationships/Systems Theory

Prior to World War II the dominant ideology underlying the prevalent psychological models was psychoanalysis. While theorists and therapists in the psychoanalytic school were cognizant of the impact of family relationships on individual personality development, they focused their theoretical conceptualizations and therapeutic interventions on the individual. The Family Systems viewpoint emerged after World War II when postwar social, interpersonal, cultural, and situational factors such as the development of general systems theory with its emphasis on intercomponent relationships, the extension of psychoanalytic treatment to a broader range of human problems, research on the family's role in the occurrence of schizophrenia, and the emergence of child guidance, marital counseling, and group therapy approaches converged to make such an approach feasible (Goldenberg & Goldenberg, 1983; 1985).

The psychological analysis of the family began with the study of its individual members by Fromm-Reichmann (1948) and Lidz and Lidz (1949) who found a pattern of cold, rejecting, domineering, and guilt-producing behavior in the mothers of patients diagnosed with schizophrenia combined with passive, detached, and ineffective behavior on the part of their fathers. About the same

time, Harry Stack Sullivan (1953) asserted that individual personality is formed from repeated exposure to enduring patterns of interpersonal interactions. Subsequently, other researchers focused on interaction between family members as the crucial factor in the development of schizophrenia. Bateson, Jackson, Haley, and Weakland (1956) identified a pattern of "double-bind" communications in these families characterized by contradictory messages which consistently place the receiver in a no-win situation. Hirsch and Leff (1975) later demonstrated that this double bind pattern may also occur in normal families. Bowen (1960) found that families of schizophrenics interact by vacillating between *stuck togetherness* and *emotional divorce*, and use over involvement with the identified patient to bring this situation into a kind of rigid balance. Focusing on the troubled member allows other family members to "come together" to serve the troubled one and at the same time maintain a safe emotional distance from each other. Wynne, Ryckoff, Day, and Hirsch (1958) found that members in these families conceal their underlying emotional estrangement with a false front of togetherness which they termed *pseudomutuality*. Bowen (1960) and Olson and McCubbin (1983) identified the normal adolescent transition as being a particular threat to the fragile equilibrium established in these families. Stierlin (1972) specifically addressed the parent/adolescent relationship and described a process in which *centripetal* forces pull family members toward a state of emotional enmeshment and *centrifugal* forces pull them toward a state of emotional disengagement. In families where centripetal forces predominate, the adolescent is *bound* to the

family and discouraged from experiencing the world beyond. In families where centrifugal forces are dominant, the adolescent is *expelled* from the family and encouraged to seek solace and interaction with peers. Stierlin asserted that the healthiest families are those that achieve a balance between these two extremes.

Numerous researchers have documented the existence of various combinations of enmeshment and disengagement in dysfunctional families. Dadds, Sanders, Morrison, and Rebgetz (1992), and Ge, Lorenz, Conger, Elder, and Simons (1994) found that both externalizing and internalizing problems are associated with families which bind adolescents into the family system and discourage them from individuating. Minuchin, Montalvo, Guerney, Rosman, and Schumer (1967) found a pattern of either extreme enmeshment, extreme disengagement, or alternation between the two in delinquency producing families. Minuchin, Rosman, and Baker (1978) found extreme enmeshment in psychosomatic families where symptoms of asthma, diabetes, or anorexia nervosa in adolescents were exacerbated by the emotional stress caused by overinvolvement within the family group. Boszormenyi-Nagy and Spark (1973) found a pattern of boundary-violation in enmeshed families where members intrude upon or "commandeer" roles that rightly belong to others. Immature parents in these systems may actually assume a child-like function and cast a child in the role of parent--a phenomenon Boszormenyi-Nagy and Spark call *parentification*. Wallerstein (1984) and Zastowny and Lewis (1989) documented a pattern of enmeshed relationships in families which exhibit poor adjustment to

divorce. Lopez (1991) found that enmeshed, conflictual family relationships significantly contributed to poor academic and personal adjustment in college freshmen and sophomores. Barber, Olsen, and Shagle (1994), Fauber, Forehand, Thomas, and Wierson (1990), and Hauser (1991) each demonstrated that enmeshed parent/child relationships are directly associated with internalizing disorders. This was supported in a later study by Barber and Buehler (1996) that found a strong positive relationship between enmeshment and early adolescent internalizing problems. These adolescents demonstrated a marked pattern of emotional withdrawal in the context of the intrusive family relationships that characterize enmeshed patterns. At the other end of the dimension, Holmbeck and Wandrei (1993) found that college men who were disconnected from family members were less well-adjusted, and Mothersead, Kivlighan, and Wynkoop (1998) found that adolescents who were disengaged from their parents exhibited increased levels of interpersonal distress.

Other family theorists turned their attention to the non-clinical population to study interactions within healthy family systems. Lewis, Beavers, Gosset, and Phillips (1976) rated 103 families' videotaped behavior along five dimensions: family structure, congruence between the family's self-concept and the rater's concept of the family, effectiveness of the family's negotiation style, autonomy, and family affect. They found that in high functioning families boundaries are respected so that each person can maintain a strong sense of self-identity within a structure of closeness and connection to other members. Family members in such a system are, in effect, separate and connected at the same time. Olson

and McCubbin (1983) used factor analysis and concept clustering to study families at various points along the life-span and found that in healthy families communication facilitates a flexible balance between adaptability and cohesion allowing families to avoid rigidity at one end of the continuum and chaos at the other. Reiss (1981) likewise identified a continuum from chaos and enmeshment in *consensus-sensitive* families, through orderly balance in *environment-sensitive* families, to disengagement in *interpersonal distance-sensitive* families.

This concept of balance between extremes was later conceptualized as cohesion, as opposed to enmeshment/disengagement, and was found to be positively and linearly related to family functioning (Farrell & Barnes, 1993; Barber & Buehler, 1996). Barber and Buehler (1996) demonstrated that family cohesion, defined as: "shared affection, support, helpfulness, and caring among family members" (p. 433) without cross-generational patterns of enmeshment, is negatively associated "with both internalizing and externalizing adolescent problem behaviors" (p. 433). Mathijssen, Koot, Verhulst, De Bruyn, and Oud (1998) found that high positive family relationships characterized by a sense of mutual justice protects children from internalizing disorders, and Perosa and Perosa (1993), using canonical analyses of data gathered from one hundred eighty-two college students, found that "clear boundaries and the expression and resolution of conflict, in conjunction with the absence of cross-generational alliances, are associated with identity achievement and positive coping strategies" (p. 479).

In sum, just as Shedler and Block (1990) and Jones (1968; 1971) found a

relationship between the extremes of abstention and abuse and psychosocial pathology in adolescents, family systems researchers documented a relationship between the extremes of enmeshment and disengagement and dysfunction in family systems. These studies show that the healthiest adolescent behavior and parent/adolescent relationships develop in families which achieve a flexible balance between extremes, and that psychosocial pathology relates in a "U-shaped" fashion to the extremities. In addition, a connection was made between enmeshed families and adolescents who are "bound" to the family and discouraged from experiencing life beyond, and disengaged families and adolescents who are "expelled" to seek connection and involvement outside the family system.

What follows is a review of studies which have specifically addressed the association between family relationship factors and adolescent substance involvement. These studies have been selected because of their pertinence to the current research, their emphasis on the developmental aspects of substance involvement, their inclusion of samples at all three levels of involvement: abstention, experimentation/use, and abuse, and their focus on maternal and paternal factors as separate variables as opposed to a combined parental factor. A review of studies which have addressed the nature of abstention is also included.

Family Factors and Substance Use, Abuse, and Abstention in Adolescence

Family factors have long been recognized as significant contributors to adolescent substance use and abuse. A plethora of studies have shown that

parental modeling of drug use (Johnson, Schoutz, & Locke, 1984; Kandel, 1990; Kandel, Kessler, & Margulies, 1978; Wills, McNamara, Vaccaro, & Hirky, 1996), parental attitudes about drugs (Bailey & Ellerman, 1994; Brook, Gordon, Whiteman, & Cohen, 1986; Jessor & Jessor, 1977; Hansen, Graham, Sobel, Shelton, Flay, & Johnson, 1987; Kandel, Kessler, & Margulies, 1978; McDermott, 1984), adolescent's perceptions of family support and control (Foxcroft & Lowe, 1991, 1995) and family management strategies (Baumrind, 1985; Brook, Whiteman, Brook, & Gordon, 1991; Hawkins, Catalano, & Miller, 1992; Kandel, & Andrews, 1987) have each been correlated with drug use and abuse in adolescents. Since most of these studies assume that the relationship between parental factors and substance involvement is linear, they do not address the relationship between problematic family factors and the other end of the substance involvement continuum, abstinence. As with the connection between abstinence and personality factors addressed previously, inferential evidence must be found.

Jessor and Jessor's (1975) Problem-Behavior Theory provides the framework for such a connection. The Jessors' conceptualization of *transition proneness* as characteristic of adolescent development includes movement away from values and attitudes held by parents toward values and attitudes held by peers (Jessor & Jessor, 1975, 1977). While this shift in allegiance from parents to peers has been found to be a normal aspect of adolescent development (Bowerman & Kinch, 1959; Bronfenbrenner, 1972; Cohen, 1955; Coleman, 1961; Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, &

Mac Iver, 1993; Floyd & South, 1972; Hirschi, 1969; Simmons & Blyth, 1987), accelerated movement away from parent held values and attitudes has been associated with problem behaviors (Jessor & Jessor, 1975, 1977; Pritchard & Martin, 1996). The implication in family theory terms is that accelerated movement away from parent held values and attitudes is associated with emotional disengagement (Brook, Brook, Gordon, Whiteman, & Cohen, 1990; Minuchin, Montalvo, Guerney, Rosman, & Schumer, 1967) and expulsion from the family system (Stierlin, 1972).

On the other end of the continuum, Jessor and Jessor (1975) found that abstainers resist this movement altogether. "Abstainers...represent a pattern that, for the most of our youths, is unraveled by the passage of time and by what may be the ordinary psychological processes of growth" (p. 49). The implication in family theory terms is that resistance to move away from parental attitudes and values is associated with enmeshment and consensus-sensitivity (Reiss, 1981) and to being bound to the family system (Stierlin, 1972). If this is indeed true, a balance between disengagement from and absolute acceptance of parent held values and attitudes should be found in psychosocially healthy adolescents.

Direct evidence for this conclusion is found in a study by McMaster and Wintre (1996) who examined the interactive association between adolescent abstention, experimentation, and regular use and two adolescent/parent relationship variables: *Perception of Parental Reciprocity*, the degree to which the adolescent perceives that his or her parents treat him or her with mutual respect, equality, and cooperation in a balanced "give and take" relationship,

and *Perceived Parental Approval*, the degree to which the adolescent perceives that his or her parents approve of substance use. Their findings indicate that a relationship between adolescent and parent characterized by balanced reciprocity is associated with a lower probability of substance abuse. The key word here is balance. Imbalance (i.e., rejection of parental values on one end and total acceptance at the other extreme) implies psychosocial maladjustment. Results of a study that specifically assessed the autonomy/attachment continuum in the relationships between forty-four teen-aged daughters and their parents indicated that poly-drug dependent girls were significantly less well attached and less autonomous than controls who demonstrated a balance between attachment and autonomy (Ratti, Humphrey, and Lyons, 1996).

The above studies treat maternal and paternal factors as a single parent variable. However, there is evidence in the research that mothers and fathers differ in the way that they parent (Almeida & Galambos, 1991; Wierson, Armistead, Forehand, Thomas, & Fauber, 1990), and that mothers' and fathers' parenting behaviors are associated differently to adolescent problem behaviors (Forehand & Nousianen, 1993). This difference was documented in a recent review of the literature wherein Phares (1996) found a greater association between parent and child psychopathology for fathers than for mothers. In related research on the relationship between family structure and adolescent drug use, Hoffmann and Johnson (1998) found that "adolescents who reside with their mothers fare better than those who reside with their fathers in both single-parent and stepparent families" (p. 634). A specific association between

adolescent abstention from substances and the quality of the paternal/adolescent relationship independent of the maternal/adolescent relationship has been implicated in several studies (Goldstein & Sappington, 1977; Kandel, 1990; Kandel, Kessler, & Margulies, 1978; Prendergast, 1974; Shedler & Block, 1990; Stice & Gonzales, 1998), and directly addressed in studies by Brook and her associates (Brook, Brook, Gordon, Whiteman, & Cohen, 1990; Brook, Gordon, & Brook, 1980; Brook, Whiteman, Brook, & Gordon, 1981).

To test the effects of perceived paternal relationships and adolescent personality attributes on female adolescent marijuana use, Brook, Gordon, and Brook (1980) studied 36 White, inner city adolescent females from intact families. Multiple regression analysis showed that two paternal factors, the degree of paternal warmth and child-centeredness and the degree to which the daughter identifies with and accepts the ideas and values held by the father, impact the level of adolescent marijuana use independently of the adolescent's own personality characteristics. Correlational analysis showed that level of use is negatively associated with these same two paternal factors.

To test the effects of paternal determinants on male adolescent marijuana use, Brook, Whiteman, Brook, and Gordon (1981) examined 246 middle-class, White, male college students from intact homes and their fathers. Multiple regression analysis showed that the impact of the paternal factors on the level of use is mediated through the adolescent's personality characteristics. Multiple discriminant function analysis on the paternal and adolescent factors and their

relationship to level of use successfully discriminated between the three levels of involvement: abstention, occasional use/experimentation, and regular use.

Correlational analysis showed that elevated levels of paternal unconventionality, tolerance of drug use, and difficulty in personal relationships are positively related to regular use of marijuana by the adolescent male as are paternal socialization techniques characterized by a lack of child-centeredness, lack of affection, and poor communication. Likewise the degree to which the son identifies with and accepts the ideas and values held by the father is negatively related to the level of marijuana use.

Differential main effects of paternal and maternal variables on adolescent drug use was also demonstrated by Brook, Brook, Gordon, Whiteman, and Cohen (1990) in a cross-sectional study of 649 college students and their fathers and a longitudinal study of 429 children and their mothers. They found that "Conventionality (intolerance of deviance, religiosity, nonuse of drugs) appeared to be more important for fathers than for mothers" (p. 211), and that "emotional distress in mothers (poor ego integration, impulsivity, low self-esteem, anxiety, interpersonal difficulty, and obsessiveness) was highly related to their children's use of marijuana" (p. 211). They also found that "paternal techniques of control had little effect on the adolescent's marijuana use, whereas maternal overpermissiveness and psychological control through guilt were associated with more frequent use of marijuana" (p. 211).

In sum, there is both direct and indirect evidence for an association between the quality of adolescent/paternal relationship and level of adolescent

substance use.

Abstention

While the greatest proportion of the information base on abstention has been produced as a byproduct of alcohol and substance use/abuse research, a very few studies have addressed abstention directly. In the most comprehensive analysis of abstention to date, Knupfer and Room (1970) conducted a review of surveys on the drinking habits of adults in large metropolitan areas in the United States. They sought to identify different types of abstainers, determine their relative frequency, determine if there is a modal type, identify the social characteristics that differentiate abstainers from drinkers, and determine how abstainers adapt themselves to a culture in which drinkers predominate. They drew their information from large-city factions of nationwide surveys (Cahalan, Cisin, & Crossley, 1967; American Institute of Public Opinion, 1966; Mulford, 1963; Riley & Marden, 1947) and from surveys of specific large cities: Seattle, Spokane, Tacoma (Maxwell, 1952), Berkeley, California (Knupfer, 1961), San Francisco (Knupfer & Room, 1964), New York City (Elinson, Padilla & Perkins, 1967), Hartford-West Hartford Connecticut (Cahalan, Cisin, Kirsch, & Newcomb, 1965), and Cedar Rapids, Iowa (Mulford & Wilson, 1966).

Knupfer and Room (1970) approached their review from the premise that just as an accurate appraisal of substance use/abuse must distinguish between various levels of substance involvement, an accurate appraisal of abstention must distinguish between various levels of substance non-involvement. They established three drinking categories: moderate drinker, heavy drinker, and very

heavy drinker, and two abstaining categories: lifelong virtual abstainers and current abstainers. They defined lifelong virtual abstainers as those who drink no more than two drinks at a time and no more frequently than once a month, current abstainers as those who have exhibited the above drinking pattern within the last year but have a history of moderate or heavier drinking, very heavy drinkers as those who drink six or more drinks at a time at least once a week, moderate drinkers as those who drink no more than five drinks at a time and not as often as once a week, and heavy drinkers as those who drink more than moderate drinkers but less than very heavy drinkers.

Knupfer and Room (1970) found that approximately 30% of the respondents were current abstainers and 75% of that percentage were lifelong abstainers. There was no difference in the preponderance of male and female current abstainers, but there were markedly more women in the lifelong abstainer group. The researchers explored for differences in three basic categories: *reasons for not drinking*, *attitudes toward drinking*, and *personality and values*. The reasons given for abstention ranged from moralistic, such as religious beliefs, to inconsequential, such as dislike of the taste or smell, to circumstantial, such as financial constraints. No one reason type distinguished between the two abstention groups. In general, abstainers reported less favorable attitudes toward drinking than drinkers, but 77% of the abstainers and 54% of the drinkers agreed with the statement: "drinking does more harm than good." There was no difference between the abstainer and drinker groups on the measures of authoritarian values and repressive personality characteristics,

however, there was a significant difference on measures of conventionality. On all five measures in this category, conformity, moralism, rigidity, strict attitudes about right and wrong, and importance of religion, lifelong virtual abstainers were by far more conventional than very heavy drinkers. In addition, over twice as many lifelong virtual abstainers as very heavy drinkers had a low childhood delinquency score (i.e., "they were not often truant, never wanted to run away from home, and were not sent to the school principal for misbehavior," p.127). A significant finding in this review was that "abstinence is not a part of the dominant American culture but tends to be found in those most likely to be excluded from full participation in the society" (126).

In sum, what little research on abstention that there is supports the Shedler and Block (1990) and Jessor and Jessor (1977) findings that abstainers are highly conventional and tend to function outside mainstream social groups.

Hypotheses

In light of the research which has identified adolescent abstention as symptomatic of a broader psychosocial maladjustment profile, associated adolescent abstention with a personality structure low in novelty-seeking, high in harm-avoidance, and high in reward dependence, and implicated low levels of paternal/adolescent conflict independent of the maternal/adolescent relationship in the development of abstention behavior, the following hypotheses are presented:

H₁: Adolescents at each of three levels of involvement with substances: *abstention*, *use/experimentation*, and *abuse*, will differ on three dimensions of personality variation: *novelty seeking*, *harm avoidance*, and *reward dependence*.

H_{1a}: Adolescents who report *abstention* from involvement with substances are more likely to be lower in *novelty-seeking* behavior than adolescents who report *use/experimentation* or *abuse* levels of involvement with substances.

H_{1b}: Adolescents who report *abstention* from involvement with substances are more likely to be higher in *harm-avoidance* behavior than adolescents who report *use/experimentation* or *abuse* levels of involvement with substances.

H_{1c}: Adolescents who report *abstention* from involvement with substances are more likely to be higher in *reward dependence* behavior than adolescents who report *use/experimentation* or *abuse* levels of involvement with substances.

H₂: Adolescents at each of three levels of involvement with substances: *abstention*, *use/experimentation*, and *abuse*, will differ in their self reported attitude toward their father or primary male family figure. The anticipated ranking of the adolescents from most positive attitude to most negative attitude is: Adolescents who abstain from substances > Adolescents who use/experiment with substances > Adolescents who abuse substances.

H₃: Adolescents at each of three levels of involvement with substances: *abstention*, *use/experimentation*, and *abuse*, will differ in their self reported attitude toward their mother or primary female family figure. The anticipated ranking of the adolescents from most positive attitude to most negative attitude is: Adolescents who abstain from substances > Adolescents who use/experiment with substances > Adolescents who abuse substances.

H₄: Adolescents at four different levels of attitude toward their parents: *high positive attitude toward father plus high positive attitude toward mother*, *high positive attitude toward father plus low positive attitude toward mother*, *low positive attitude toward father plus high positive attitude toward mother*, and *low positive attitude toward father plus low positive attitude toward mother* will differ in the degree of their involvement with substances.

To summarize, this study is attempting to provide evidence for an association between a personality profile low in novelty-seeking, high in harm-avoidance, and high in reward dependence and substance abstention behavior in adolescents. It is also attempting to demonstrate a low level of

paternal/adolescent discord independent of the maternal/adolescent relationship in adolescents who abstain from involvement with substances. It is hoped that this study will provide data to either support or refute research that has found abstention to be indicative of psychosocial maladjustment in adolescence.

Chapter III

METHODOLOGY

Introduction

An in-depth explanation of the methods used to implement this study is presented in this chapter. Included are a description of the participants, a discussion of the specific procedures used to administer the questionnaires and gather the data, and a description of the instruments with a review of the data on their validity and reliability.

Participants

The sample consisted of 301 twelfth-grade students from one high school in a Detroit suburb comprised largely of White students (95.9% with the remaining 4.1% representing other ethnic groups) from a middle class background (median household income \$38,612, with the per capital income reported at \$14,621; State of Michigan, 1998). The students were surveyed during a required senior class assembly to insure optimum participation and to prevent loss of class time. Two hundred and ninety-two students consented to participate in the survey, six students declined, and three students turned back research packets that were too incomplete to use. This represents a participation rate of 97%.

Procedures

Copies of the instruments were submitted to the high school principal and senior class advisor per their request for their approval. Senior class parents were sent a letter (Appendix A) informing them of the purpose of the study and

the nature of the questionnaires. Parents were assured that participation in the study was completely voluntary and confidential, and that the student or the parent could refuse participation without penalty to the student. They were asked to call the school or return an attached form if they did not want their son or daughter to participate. No parent returned the refusal form. One parent called the primary investigator to make sure that if her daughter participated in the study she would not miss the senior assembly. The passive consent procedure was selected because it avoids several serious problems inherent in active consent procedures (e.g., significantly reduced sample size, potentially increased sample bias, and under representation of such groups as ethnic and racial minorities, low achieving children, children whose parents are less well-educated, and children who are at risk for problem behaviors; Anderman, Cheadle, Curry, Diehr, Shultz, & Wagner, 1995; Dent, Galaif, Sussman, Stacy, Burtun, & Flay, 1993; Ellickson & Hawes, 1989; Josephson & Rosen, 1978; Kearney, Hopkins, Mauss, & Weisheit, 1983).

Sewell and Hauser (1975) reported that an 80% return rate is necessary for accurate sample analysis, but active parent consent procedures have been shown to garner only a 30-60% return rate (Kearney, Hopkins, Mauss, & Weisheit, 1983; Lueptow, Mueller, Hammes, & Master, 1977; Moberg & Piper, 1990; Severson and Ary, 1983; Severson & Biglan, 1989; Thompson, 1984). Passive consent procedures, however, have been shown to yield a participation rate of 85% (Bell, Gareleck, & Ellickson, 1990). In a study specifically comparing active versus passive parental consent procedures, Ellickson and Hawes (1989)

found that parental non-response was due to apathy or inertia rather than to deliberate refusal, that regular first-class mail did "ensure parental receipt of the consent package in almost all cases" (p. 51), and that "passive consent...can provide a feasible and ethical alternative to active consent" (p. 54). Passive consent procedures have been successfully used in recent research by Anderman, Cheadle, Curry, Diehr, Shultz, and Wagner (1995), Dent, Galaif, Sussman, Stacy, Burtun, and Flay (1993), and Stice and Gonzales (1998).

The study was directed and instruments were administered by the primary investigator and eleven assistants during a 90 minute senior assembly period. Upon entering the auditorium, the students were randomly divided into 10 groups of approximately 30 students. Each group was assigned one research assistant and directed to sit in a separate area in the auditorium. The students were informed of the nature and purpose of the study at the beginning of the meeting, and two letters of assent (Appendix B) were distributed to each student. Students who assented to participate were asked to keep one signed copy of the assent form and turn the second signed copy into their research assistant in exchange for the research packet. Students were assured that participation was entirely voluntary and that all collected data would remain confidential. Students who preferred not to participate in the study were given the opportunity to move to a separate area in the auditorium monitored by school staff.

The subjects were asked that they not put their names on any of the instruments or the envelope, that they answer every question, and that they work silently.

The primary investigator and eleven assistants were present throughout the entire procedure to answer questions, to collect signed assent forms, and to distribute and collect instrument packets. The instruments were given in counter balanced order to reduce the order effect. The measures were completed by circling a true or false response and by checking or writing in the number of a selected answer. All data were collected during this meeting. Seniors who were absent or failed to attend the meeting were excluded from the study. There was no make-up testing and no instruments were allowed to leave the testing area.

Instrumentation

Three instruments were used:

1. Tridimensional Personality Questionnaire (TPQ)
2. Demographic Survey/Substance Use Questionnaire
3. Child's Attitude Toward Father (CAF) and Mother (CAM) Scales

Tridimensional Personality Questionnaire (TPQ).

The Tridimensional Personality Questionnaire (Appendix C) was developed by Cloninger (1987b), and is based on Cloninger's (1986) neurobiological learning model of susceptibility to alcohol abuse. It is a 100-item, self-report questionnaire which measures personality on three dimensions: *novelty seeking, harm avoidance, and reward dependence*. The students are instructed to circle either true or false for each statement as it applies to their circumstances. A scoring key is available that provides information on which items have to be reverse scored. A score for each dimension is obtained by counting the number of correct responses. Higher scores on novelty seeking,

harm avoidance and reward dependence indicate increased incidence of the measured behaviors. Higher scores on novelty seeking and low scores on harm avoidance and reward dependence have been correlated with alcohol abuse (Cloninger, Przybeck, & Svrakic, 1991). Conversely, low scores on novelty seeking, coupled with high scores on harm avoidance and reward dependence should be correlated with alcohol abstention.

As part of the development of this instrument, a total of 1,267 subjects, including 326 White males, 136 Black males, 350 White females, and 207 Black females were tested. Acceptable reliability was demonstrated by good across group consistency and test-retest performance. Internal consistency for the four groups, White males, Black males, White females, and Black females, was demonstrated in alpha coefficients ranging from .77 to .85 for harm avoidance, .68 to .75 for novelty seeking, and .61 to .69 for reward dependence. The stability of this instrument over a six month period was reflected in test-retest correlations of .70, .76, and .79 for reward dependence, novelty seeking, and harm avoidance respectively.

The three personality dimensions were correlated with *social desirability*, *IQ*, *age*, and *education*. Scores on the novelty seeking dimension were negatively correlated with social desirability and age for all groups, and positively correlated with education for White males and females but not for Black males and females. The harm avoidance and reward dependence dimensions produced weak correlations with all four measures.

Factor analysis using a promax rotation showed that the harm avoidance

factor was the most robust and that the novelty seeking factor was similarly replicated across the four groups. The findings on the factor analysis supported the construct validity of the instrument. To further test the construct validity, Bagby, Parker, and Jaffe (1992) completed a confirmatory factor analysis to determine if the same factor structure could be reproduced. Their findings confirmed the structural factors obtained by Cloninger et al. (1991).

Demographic Survey/Substance Use Questionnaire.

The demographic section of this questionnaire (Appendix D) was developed to assess factors which have been shown to be significantly correlated with adolescent substance use (Christiansen, Smith, Roehling, & Goldman, 1989; Jessor, Chase, & Donovan, 1980; Newcomb & Bentler, 1989). These include the students' age, grade point average, sex, ethnicity, religious affiliation and degree of religiosity, the students' reported substance behaviors, parental education level, parental employment, and the presence or absence of alcoholism in the family.

Family socioeconomic status was determined using the *Four Factor Index of Social Status* procedure developed by Hollingshead (1975). Weights were applied to the educational level and occupation of the father and mother separately. Where both the mother and father were employed and living together with the study participant, an average of the two socioeconomic statuses were used to provide a family socioeconomic level. Where one of the parents was not employed, the socioeconomic level of the employed parent was used. Where one of the parents was not present in the home, the socioeconomic level of the

parent residing with the study participant was used as the family socioeconomic status.

The substance use section was developed to create three classification levels of substance involvement: *abstention*, *use/experimentation*, and *abuse*. The rules for group assignment followed those established by Shedler and Block (1990). Abstainers were participants who reported that they have never tried any substance. User/experimenters were participants who reported having used either alcohol or marijuana "once or twice," "once a month," or "2-3 times a month," and who have tried no more than one additional drug. Abusers were those participants who reported using alcohol or marijuana once a week or more and at least one additional drug. Consistent with the Shedler and Block (1990) study, cigarette smoking was not included. Distinguishing between the abuse and use/experimentation categories is especially critical since some experimentation with substances may be a normal aspect of adolescent development (Clayton, 1992; Jessor & Jessor, 1975, 1977; Jones, 1968, 1971; Jones & Heaven, 1998; Newcomb & Bentler, 1988; Petraitis, Flay, & Miller, 1995; Shedler & Block, 1990). In a study comparing grouping methods for distinguishing levels of substance use, Hillman and Sawilowsky (1992) found the frequency of use approach to be a robust method for identifying distinct levels of substance involvement. The substance-use frequency method has been used by Bachman, Johnston, and O'Malley (1991); Christiansen, Smith, Roehling, and Goldman (1989); and Stein, Newcomb, and Bentler (1987).

Child's Attitude Toward Father (CAF) and Mother (CAM) Scales.

The CAF and CAM Scales (Appendix E) were developed by Giuli and Hudson (1977). They are companion 25-item instruments that measure the extent, degree, or severity of problems that a child or adolescent has with his or her father or mother. The words mother and father are used interchangeably in otherwise identical instruments. Parent-child relationship problems were examined from the adolescent's point of view. Each item was rated using a 7-point scale ranging from "1" for none of the time to "7" for all of the time. The instrument was scored by reverse-scoring the positive items, summing the scores, subtracting the number of completed items, multiplying this result by 100, and dividing by the number of items completed times 6. This score can range from 0 to 100 with higher scores indicating greater conflict with parents.

The instrument was normed using a sample of 1,072 students from heterogeneous backgrounds in 7th through 12th grades. Two cutting scores were developed, 30 and 70. Scores below 30 (+ or - 5) indicate an absence of clinically significant conflict with that particular parent, scores above 30 suggest that there is a clinically significant problem, and scores above 70 indicate severe parent relationship problems with the strong possibility of concomitant violence.

Reliability on the CAF and CAM has been determined for both consistency and stability. A mean Cronbach alpha coefficient of .95 and a low standard error of measurement of 4.56 for the CAF, along with a mean Cronbach alpha coefficient of .94 and standard error of measurement of 4.57 for the CAM indicate excellent internal consistency. Evidence for excellent stability is demonstrated in one-week test-retest correlations of .96 for the CAF and .95 for

the CAM.

In a later report of normative score performance and revalidation of the CAF and CAM based on a representative sample of 2,419 Florida adolescents, Saunders and Schuchts (1987) found that "both scales are reliable and valid measures of the magnitude of problems in the parent-child relationship from the child's point of view" (p. 373).

The CAF and CAM significantly distinguish between adolescents who self-report relationship problems with either of their parents and those who do not. The CAF and CAM also significantly predict adolescents' responses to questions regarding parent problems.

Data Analysis

The data obtained from the surveys were analyzed using SPSS 8.0 for Windows. Descriptive statistics, including frequency distributions and measures of central tendency and dispersion, were used to develop a profile of the students who participated in the study. A description of the dependent variables was also included to provide baseline data. Measures of central tendency and dispersion were used for this purpose. The hypotheses established for this study were tested using inferential statistical procedures that included multiple analysis of variance and one-way analysis of variance. All decisions on the statistical significance of the findings were made using an alpha level of .05. Figure 1 presents the statistical analysis that will be used to test each hypothesis.

Figure 1
Statistical Analysis

Research Hypothesis	Variables	Statistical Analysis
<p>H1: Adolescents at each of three levels of involvement with substances: <i>abstention</i>, <i>use/experimentation</i>, and <i>abuse</i>, will differ on three dimensions of personality variation: <i>novelty seeking</i>, <i>harm avoidance</i>, and <i>reward dependence</i>.</p> <p>H1a: Adolescents who report <i>abstention</i> from involvement with substances are more likely to be lower in <i>novelty seeking</i> behavior than adolescents who report <i>experimentation</i> or <i>abuse</i> levels of involvement with substances.</p> <p>H1b: Adolescents who report <i>abstention</i> from involvement with substances are more likely to be higher in <i>harm avoidance</i> behavior than adolescents who report <i>experimentation</i> or <i>abuse</i> levels of involvement with substances.</p> <p>H1c: Adolescents who report <i>abstention</i> from involvement with substances are more likely to be higher in <i>reward dependence</i> behavior than adolescents who report <i>experimentation</i> or <i>abuse</i> levels of involvement with substances.</p>	<p><u>Dependent Variables</u> Personality variation <i>novelty seeking</i> <i>harm avoidance</i> <i>reward dependence</i></p> <p><u>Independent Variables</u> Involvement with Substances <i>abstention</i> <i>use/experimentation</i> <i>substance abuse</i></p>	<p>Multiple analysis of variance procedures will be used to determine if personality variation differs among the three levels of involvement with substances. If there is a significant omnibus F on the MANOVA, one-way analysis of variance statistical procedures will be used to determine which of the three dimensions of personality variation are differing. On the significant dimensions, a posteriori testing will be used to determine which of the groups are differing and the direction of the differences.</p>

Research Hypothesis	Variables	Statistical Analysis
<p>H2: Adolescents at each of three levels of involvement with substances: <i>abstention, use/experimentation, or abuse</i>, will differ in their self-reported attitude toward their father or primary male family figure. The anticipated ranking of the adolescents from most positive attitude to most negative attitude is: Adolescents who abstain from substances > Adolescents who use/experiment with substances > Adolescents who abuse substances.</p>	<p><u>Dependent Variable</u> Attitude toward father</p> <p><u>Independent Variable</u> Involvement with Substances <i>Abstention</i> <i>Use/Experimentation</i> <i>Substance Abuse</i></p>	<p>One way analysis of variance procedures will be used to determine if there are differences in attitudes toward the father or primary male family figure relative to adolescents' involvement with substances. If a significant omnibus F is obtained on the analysis, a posteriori testing will be used to determine which groups are differing. An inspection of the mean scores will be used to determine the rank order of the students from most positive to most negative.</p>
<p>H3: Adolescents at each of three levels of involvement with substances: <i>abstention, use/experimentation, or abuse</i>, will differ in their self-reported attitude toward their mother or primary female family figure. The anticipated ranking of the adolescents from most positive attitude to most negative attitude is: Adolescents who abstain from substances > Adolescents who use/experiment with substances > Adolescents who abuse substances.</p>	<p><u>Dependent Variable</u> Attitude toward Mother</p> <p><u>Independent Variable</u> Involvement with Substances <i>Abstention</i> <i>Use/Experimentation</i> <i>Substance Abuse</i></p>	<p>One way analysis of variance procedures will be used to determine if there are differences in attitudes toward the mother or primary female family figure relative to adolescents' involvement with substances. If a significant omnibus F is obtained on the analysis, a posteriori testing will be used to determine which groups are differing. An inspection of the mean scores will be used to determine the rank order of the students from most positive to most negative.</p>
<p>H4: Adolescents, at four different levels of attitude toward their parents will differ in the degree of their involvement with substances.</p>	<p><u>Dependent Variable</u> Degree of substance use</p> <p><u>Independent Variable</u> Attitude Toward Parents <i>High Mother, High Father</i> <i>High Mother, Low Father</i> <i>Low Mother, High Father</i> <i>Low Mother, Low Father</i></p>	<p>One way analysis of variance procedures will be used to determine if adolescents, divided into four groups based on their attitudes towards their parents, will differ in their degree of substance use. If a significant omnibus F is obtained on the analysis, a posteriori testing will be used to determine which groups are differing.</p>

Chapter IV

RESULTS OF DATA ANALYSIS

Results of the data analysis are presented in this chapter. The analysis is divided into two sections. The first section uses descriptive statistics to describe the sample and provide information on the level of substance use. The second section employs inferential statistical analyses to test each of the hypotheses.

The purpose of this study was to identify personality and family relationship correlates of drug abstention in adolescents. The study attempted to provide evidence for an association between drug abstaining behavior and a personality profile low in *novelty-seeking*, high in *harm-avoidance*, and high in *reward dependence* personality dimensions. It also attempted to demonstrate a low level of father/adolescent discord independent of the nature of the mother/adolescent relationship in adolescents who abstain from involvement with substances.

The sample consisted of 301 twelfth-grade students from a suburban Detroit high school. Of this number, 292 volunteered to participate in the study for a participation rate of 97%.

Demographic and Substance Use Variables

The respondents were asked to complete a 24 item self-report survey. This survey assessed demographic factors which have been shown to correlate with adolescent substance abuse: gender, age, grade point, ethnicity, religiosity, and parent's education and occupation. The survey also gathered information on substance use to create three classification levels of substance involvement:

abstention, use/experimentation, and abuse. Participants who reported that they have never used alcohol, marijuana, or any other drug were classified as *abstainers*. Participants who reported having used alcohol or marijuana once or twice, once a month, or two to three times a month, and no more than one additional drug were categorized as *user/experimenters*. Participants who reported using alcohol or marijuana once a week or more, and at least one additional drug were classified as *abusers*. Table 1 presents the results of this analysis.

Table 1
Frequency Distributions
Students by Substance Use Category

Substance Use Category	Frequency	Percent
Abstainer	36	12.4
User/Experimenter	187	64.0
Abuser	69	23.6
Total	292	100.0

Abstainers (n=36, 12.4%) formed the smallest group, abusers (n=69, 23.6%) the next largest group, and user/experimenters (n=187, 64.0%) the largest category. These classifications were used to describe the demographic characteristics of the sample.

The students were asked to identify their gender on the survey, and their responses were crosstabulated by substance use category. The results of this analysis are presented in Table 2.

Table 2
Crosstabulation
Gender by Substance Use Category

Gender	Substance Use Category						Total	
	Abstainer		User/Experimenter		Abuser		N	%
	N	%	N	%	N	%		
Male	18	50.0	77	41.2	33	47.8	128	43.8
Female	18	50.0	110	58.8	36	52.2	164	56.2
Total	36	100.0	187	100.0	69	100.0	292	100.0
$\chi^2(1)=1.54, p=.463$								

The sample was comprised of 164 (56.2%) females and 128 (43.8%) males. Of the 36 participants classified as abstainers, 18 (50.0%) were females, and 18 (50.0%) were males. Of the 187 participants categorized as user/experimenters, 77 (41.2%) were females and 110 (58.8%) were males, and of the 69 participants classified as abusers, 33 (47.8%) were males and 36 (52.2%) were females. To determine if the distribution of students by gender was similar within the three classification levels, chi-square analysis was used. The resultant chi-square value of 1.54 was not statistically significant at an alpha level of .05 with 1 degree of freedom. Based on this finding, there did not appear to be a difference among the three groups of students in terms of gender distribution.

The students were asked to report their age and grade point average. Grade point averages could exceed 4.0 as students were awarded extra honor points for completing advanced placement classes. One-way analysis of variance procedures were used to compare the ages and grade point averages among the three groups. Table 3 presents the analysis of variance for age of the

respondent.

Table 3
One-way Analysis of Variance
Age of Students

Source of Variation	Sum of Squares	DF	Mean Square	F Ratio	Sig of F
Between Groups	.16	2	.08	.38	.683
Within Groups	60.46	289	.21		
Total	60.62	291			

The resultant F ratio of .38 was not statistically significant at an alpha level of .05 with 2 and 289 degrees of freedom. This finding provided evidence that the students in the three groups did not differ by age. To further investigate this lack of difference, descriptive statistics were obtained for age by substance use category. Table 4 presents the results of this analysis.

Table 4
Descriptive Statistics
Age of Students
by Substance Use Category

Substance Use Category	Number	Mean	SD	Median	Range	
					Minimum	Maximum
Age						
Abstainer	36	18.09	.57	17.96	17.25	19.42
User/Experimenter	187	18.13	.44	18.00	17.42	20.33
Abuser	69	18.07	.43	18.17	16.83	19.08

**p<.01

The ages of the respondents were similar in the three classification levels. In the abstainer group, the ages ranged from 17.25 to 19.42 years with a mean

age of 18.09 (sd=.57) and a median of 17.96 years. In the user/experimenter level, the ages ranged from 17.42 to 20.33 with a mean age of 18.13 (sd=.44) and a median of 18.00 years. In the abuser group, the ages ranged from 16.83 to 19.08 years, with a mean age of 18.07 (sd=.43) and a median of 18.17 years.

The grade point averages of the students were compared using a one-way analysis of variance procedure. The results of this analysis are presented in Table 5.

Table 5

One-way Analysis of Variance
Self-Reported Grade Point Average of Students

Source of Variation	Sum of Squares	DF	Mean Square	F Ratio	Sig of F
Between Groups	7.22	2	3.61	8.84	<.001
Within Groups	113.90	279	.41		
Total	121.12	281			

The obtained F ratio of 8.84 was statistically significant at an alpha level less than .001. This finding indicated that the three groups of students differed in terms of grade point average. To further investigate the differences among the three groups in terms of their grade point averages, a posteriori analyses were used to determine which of the groups were contributing to the significant findings. Descriptive statistics were also obtained to further explain the differences. Table 6 presents the results of this analysis.

Table 6
Descriptive Statistics
Self-Reported Grade Point Average of Students
by Substance Use Category

Substance Use Category	Number	Mean	SD	Median	Range	
					Minimum	Maximum
Grade Point Average						
Abstainer	36	3.36	.59	3.40	1.3	4.4
User/Experimenter	181	3.05	.63	3.00	1.5	4.3
Abuser	65	2.81	.69	2.90	1.5	4.2
<u>Results of Scheffe's a posteriori tests</u>						
Abstainer > User/Experimenter (p=.028)						
Abstainer > Abuser (p<.001)						
User/Experimenter > Abuser (p=.035)						

Grade point averages were self-reported. For the abstainers they ranged from 1.3 to 4.4 with a mean average of 3.36 (sd=.59) and a median of 3.40. For the user/experimenters they ranged from 1.5 to 4.3 with a mean of 3.05 (sd=.63) and a median of 3.00, and for the abusers they ranged from 1.5 to 4.2 with a mean of 2.81 (sd=.69) and a median of 2.90.

Scheffé's a posteriori tests were used to compare all pairwise comparisons to determine which groups were contributing to the significant difference. The results of these analyses showed that abstainers differed significantly from user/experimenters (p=.028) and abusers (p<.001), and user/experimenters differed significantly from abusers (p=.035). Based on these findings, grade point average is significant among the three groups.

The students were asked to indicate their ethnicity. Their responses were crosstabulated by substance use category. Table 7 presents the results of this analysis.

Table 7
Crosstabulation
Ethnicity by Substance Use Category

Ethnicity	Substance Use Category						Total	
	Abstainer		User/Experimenter		Abuser			
	N	%	N	%	N	%	N	%
Afro American	0	0.0	1	0.5	1	1.5	2	0.7
Caucasian	31	86.1	166	88.8	58	87.9	255	88.2
Hispanic	3	8.3	5	2.7	1	1.5	9	3.1
Middle Eastern	0	0.0	4	2.1	0	0.0	4	1.4
Native American	2	5.6	5	2.7	3	4.5	10	3.5
Other	0	0.0	6	3.2	3	4.5	9	3.1
Total	36	100.0	187	100.0	66	100.0	289	100.0

$\chi^2(10)=9.55, p=.481$

Missing: Abuser 3

The majority of the respondents (n=255, 88.2%) reported their ethnicity as Caucasian. Ten (3.5%) indicated they were Native Americans, 9 (3.1%) indicated "other" ethnicities, 9 (3.1%) reported that they were Hispanic, and 2 (0.7%) that they were African Americans. Among the abstainers, 31 (86.1%) were Caucasian, 3 (8.3%) were Hispanic, and 2 (0.7%) Native American. In the user/experimenter category, 166 (88.8%) were Caucasian, 6 (3.2%) were "other" ethnicities, 5 (2.7%) were Hispanic, 5 (2.7%) were Native American, 4 (2.1%) were Middle Eastern, and 1(0.5%) was African American. Of the 66 students who were classified as abusers, 58 (87.9%) were Caucasian, 3 (4.5%) were Native American, 3 (4.5%) were "other" ethnicities, 1 (1.5%) was African American, and 1 (1.5%) was Hispanic. Three students in the abusers group did not provide their ethnicity on the survey. The chi-square value of 9.55 obtained on this analysis was not statistically significant at an alpha level of .05 with 10

degrees of freedom. Care must be taken in interpreting this result as 66.7% of the cells had expected frequencies less than 5.

The students were asked to indicate their religion on the survey. Their responses were crosstabulated by the substance use category. Table 8 presents the results of this analysis.

Table 8
Crosstabulation
Religion of Student by Substance Use Category

Religion of Student	Substance Use Category						Total	
	Abstainer		User/Experimenter		Abuser			
	N	%	N	%	N	%	N	%
Jewish	0	0.0	1	0.5	1	1.4	2	0.7
Protestant	17	48.6	67	36.4	20	29.0	104	35.9
Roman Catholic	4	40.0	73	39.7	30	43.5	117	40.3
Other	1	2.9	20	10.8	8	11.6	29	10.0
None	3	8.6	25	13.4	10	14.5	38	13.1
Total	35	100.0	186	100.0	69	100.0	290	100.0
$\chi^2(8)=6.33, p=.6.11$								

Missing: Abstainer 1, User/Experimenter 1

The largest group of students (n=117, 40.6%) reported that they were Roman Catholic, 104 (35.9%) identified themselves as Protestant, 38 (13.1%) indicated that they had no religion, 29 (10.0%) reported "other" as their religion, and 2 (0.7%) stated that they were Jewish. Of the 35 abstainers in the study, 17 (48.6%) were Protestant, 14 (40.0%) were Roman Catholic, 3 (8.6%) had no religion, and 1(2.9%) classified themselves as "other." In the user/experimenter category, 73 (39.2%) were Roman Catholic, 67 (36.0%) were Protestant, 25 (13.4%) had no religion, 20 (10.8%) were "other," and 1 (0.5%) was Jewish. In

the abusers classification level, 30 (43.5%) were Roman Catholic, 20 (29.0%) were Protestant, 10 (9.0%) did not practice a religion, 8 (11.6%) reported "other", and 1 (1.4%) was Jewish. One abstainer and 1 user/experimenter did not provide a response to this question.

To determine if substance use category and self-reported religion were independent, chi-square test for independence was used. The resultant chi square of 6.33 was not statistically significant at an alpha level of .05 with 8 degrees of freedom, indicating that religion was independent of substance use category.

The students were asked to report the frequency with which they attended religious activities or services. Their responses were crosstabulated by substance use category. The results of this analysis are presented in Table 9.

Table 9
Crosstabulation
Frequency of Attendance at Religious Services or Activities
by Substance Use Category

Frequency of Attendance at Religious Services or Activities	Substance Use Category						Total	
	Abstainer		User/Experimenter		Abuser			
	N	%	N	%	N	%	N	%
Never	6	16.7	52	27.8	23	33.3	81	27.7
1 to 6 times/year	10	27.8	78	41.7	21	30.4	109	37.3
7 to 11 times/year	2	5.6	12	6.4	3	4.3	17	5.8
Monthly	2	5.6	5	2.7	5	7.2	12	4.1
2 to 3 times/month	5	13.9	11	5.9	5	7.2	21	7.2
Weekly	4	11.1	23	12.3	10	3.4	37	12.7
2 to 6 times/weekly	7	19.4	6	3.2	2	2.9	15	5.1
Total	36	100.0	187	100.0	69	100.0	292	100.0

$\chi^2 (12)=27.57, p=.006$

The largest group of students (n=109, 37.3%) reported they attended religious activities or services 1 to 6 times a year, 81 (27.7%) indicated that they never attended religious activities or services, 37 (12.7%) reported that they attended weekly, 21 (7.2%) indicated they attended 2 to 3 times a month, 17 (5.8%) reported 7 to 11 times a year, 15 (5.1%) reported 2 to 6 times weekly, and 12 (4.1%) indicated that they attended monthly. Of the students in the abstainer group, 10 (27.8%) attended religious activities or services 1 to 6 times a year, 7 (19.4%) attended 2 to 6 times a year, 6 (16.7%) never attended religious activities or services, 5 (13.9%) attended 2 to 3 times a month, 4 (11.1%) attended weekly, 2 (5.6%) attended 7 to 11 times a year, and 2 (5.6%) attended monthly. In the user/experimenter group, 78 (41.7%) students attended religious activities or services 1 to 6 times a year, 52 (27.8%) never attended

religious activities or services, 23 (12.3%) attended weekly, 12 (6.4%) attended 7 to 11 times a year, 11(5.9%) attended 2 to 3 times a month, 6 (3.2%) attended religious activities or services 2 to 6 times a week, and 5 (2.7%) attended monthly. Among the abusers, the largest group of students (n=23, 33.3%) never attended religious activities or services, 21 (30.4%) attended 1 to 6 times per year, 10 (3.4%) attended weekly, 5 (7.2%) attended monthly, 5 (7.2%) attended 2 to 3 times a month, 3 (4.3%) attended 7 to 11 times a year, and 2 (2.9%) attended religious activities or services 2 to 6 times weekly.

To determine if there was a dependence between attendance at religious activities or services and the substance use category, chi-square analysis was used. The obtained chi-square value of 27.57 was statistically significant at an alpha level of .05 with 12 degrees of freedom. An examination of the standardized residuals showed that abstainers who attended religious activities or services 2 to 6 times per week were contributing to the significant finding. It appears that abstainers were likely to attend religious activities or services more frequently than the other two groups.

The students were asked to indicate the importance of religion in their lives using a four-point scale ranging from not important to extremely important. Their responses were crosstabulated by substance use category. Table 10 presents the results of this analysis.

Table 10
Crosstabulation
Importance of Religion by Substance Use Category

Importance of Religion		Substance Use Category						Total	
		Abstainer		User/Experimenter		Abuser			
		N	%	N	%	N	%	N	%
Not Important	O	7	19.4	48	25.7	24	34.8	79	27.1
	E	9.7		50.6		18.7			
	S	-9		-4		1.2			
Somewhat Important	O	10	27.8	88	47.1	30	43.5	128	43.8
	E	15.8		82		30.2			
	S	-1.5		.7		0.0			
Quite Important	O	9	25.0	38	20.3	10	14.5	57	19.5
	E	7		36.5		13.5			
	S	.7		.2		-.9			
Extremely Important	O	10	27.8	13	7.0	5	7.2	28	9.6
	E	3.5		17.9		6.6			
	S	3.5		-1.2		-.6			
Total		36	100.0	187	100.0	69	100.0	292	100.0
$\chi^2 (6)=20.67, p=.002$									

O = Observed Values

E = Expected Values

S = Standardized Residuals

The majority of the students (n=128, 43.8%) reported that religion was somewhat important. Seventy-nine (27.1%) indicated that religion was not important, 57 (19.5%) reported that religion was quite important, and 28 (9.6%) reported that religion was extremely important. Among the abstainers, 10 respondents (27.8%) reported that religion was extremely important, 10 (27.8%) indicated that religion was somewhat important, 9 (25.0%) reported that religion was quite important, and 7 (19.4%) reported that religion was not important.

Among the user/experimenters, 88 (47.1%) thought that religion was somewhat important, 48 (25.7%) perceived that it was not important, 38 (20.3%) indicated that religion was quite important, and 13 (7.0%) reported that religion was extremely important.

The largest group of abusers (n=30, 43.5%) thought that religion was somewhat important, 24 (34.8%) indicated it was not important, 10 students (14.5%) in this category reported it was quite important, while 5 (7.2%) felt it was extremely important.

To determine if the importance of religion was independent of substance use category, chi-square test for independence was used. The resultant chi-square value of 20.67 was statistically significant at an alpha level of .05 with 6 degrees of freedom. This result indicated that importance of religion was dependent on substance use category. Abstainers were significantly more likely to consider religion extremely important in their lives.

To examine this difference, the standardized residuals were examined for the three groups. Standardized residuals greater than 2.00 indicated the difference between the observed and expected scores was statistically significant. The results of this analysis showed that the difference between expected and observed values for abstainers who indicated that religion was extremely important was significant.

Students were asked to indicate the frequency with which they listened to or watched religious programs on radio or television. Their responses were crosstabulated by substance use category for presentation in Table 11.

Table 11

Crosstabulation
Frequency of Listening to/Watching Religious Programs on Radio or Television
by Substance Use Category

Frequency of Listening to/Watching Religious Programs on Radio/Television	Substance Use Category						Total	
	Abstainer		User/Experimenter		Abuser			
	N	%	N	%	N	%	N	%
Never	26	72.1	156	83.8	59	85.6	241	82.8
1 to 6 times/year	6	16.7	22	11.8	8	11.6	36	12.4
7 to 11 times/year	1	2.8	2	1.1	0	0.0	3	1.0
Monthly	0	0.0	2	1.1	0	0.0	2	0.7
2 to 3 times/month	1	2.8	2	1.1	1	1.4	4	1.4
Weekly	0	0.0	0	0.0	0	0.0	0	0.0
2 to 6 times/weekly	1	2.8	2	1.1	1	1.4	4	1.4
Daily	1	2.8	0	0.0	0	0.0	1	0.3
Total	36	100.0	186	100.0	69	100.0	291	100.0
$\chi^2 (12)=12.46, p=.409$								

The majority of the students (n=241, 82.8%) reported they did not listen to or watch religious programs on radio or television. Thirty-six (12.4%) indicated they listened to or watched these types of programs from 1 to 6 times a year, 4 (1.4%) listened to or watched 2 to 3 times a month, 4 (1.4%) did so 2 to 6 times weekly, 3 (1.0%) reported listening to or watching 7 to 11 times a year, 2 (0.7%) listened to or watched religious programs monthly, and 1(0.3%) listened to or watched this type of programming daily. None of the students reported listening to or watching these programs weekly.

Among the abstainers, 26 (72.1%) reported that they never listened to or watched religious programming. Six (16.7%) indicated that they listened to or watched these types of programs 1 to 6 times a year, and 1 student (2.8%)

reported they listened to or watched this type of programming for each of the following frequency categories: 7 to 11 times a year, 2 to 3 times a month, 2 to 6 times weekly, or daily.

The majority of the students in the user/experimenter group (n=156, 83.8%) reported that they never listened to religious programming on radio or watched it on television. Twenty-two (11.8%) reported that they did so 1 to 6 times a year, and 2 students (1.1%) reported that they listened to or watched this type of program for each of the following frequency categories: 7 to 11 times a year, monthly, 2 to 3 times a month, and 2 to 6 times a week. None of the students in the user/experimenter group reported listening to or watching this type of programming weekly or daily.

Of the 69 participants in the abuser category, 59 (85.6%) reported that they never listened to or watched religious programs on television or radio. Eight (11.6%) reported that they did so 1 to 6 times a year, and 1 student (1.4%) reported that they listened to or watched religious radio or television programs for each of the following frequency categories: 2 to 3 times a month, and 2 to 6 times weekly. None of the participants in the abusers category reported that they listened to or watched this type of programming weekly or daily.

A chi-square test for independence was used to determine if the frequency of listening to or watching religious programming on radio or television was independent of substance use category. The results of this analysis produced a chi-square value of 12.46 which was not statistically significant at an alpha level of .05 with 12 degrees of freedom. This result provided evidence that frequency of listening to or watching religious programming was not associated

with level of substance use.

The participants were asked to identify their father's and mother's occupations. The responses to these questions were crosstabulated by substance use category. The results of the analysis for the father's occupation are presented in Table 12.

Table 12

Crosstabulation
Father's Occupation
by Substance Use Category

Father's Occupation	Substance Use Category						Total	
	Abstainer		User/Experimenter		Abuser			
	N	%	N	%	N	%	N	%
Professional	2	5.7	8	4.3	5	7.4	15	5.2
Business Manager	5	14.3	14	7.5	5	7.4	24	8.3
Business Owner	4	11.4	10	5.4	12	17.6	26	9.0
Secretary/Clerical	2	5.7	5	2.7	3	4.4	10	3.5
Foreman/Sales Manager	3	8.6	13	7.0	2	2.9	18	6.2
Craftsman	4	11.4	25	13.4	7	10.3	36	12.5
Service worker	6	17.1	49	26.3	13	19.1	68	23.5
Laborer	6	17.1	36	19.4	14	20.6	56	19.4
Homemaker	0	0.0	2	1.1	1	1.5	3	1.0
Student	0	0.0	1	0.5	0	0.0	1	0.3
Other	3	8.6	23	12.4	6	8.8	32	11.1
Total	35	100.0	187	100.0	68	100.0	289	100.0

$\chi^2(20)=18.10, p=.581$

The majority of the respondents (n=68, 23.5%) reported that their father or primary father figure was a service worker. Fifty-six (19.4%) reported that he was a laborer, 36 (12.5%) that he was a craftsman, 26 (9.0%) that he was a

business owner, 24 (8.3%) that he was a business manager, 18 (6.2%) that he was a foreman or sales manager, 15 (5.2%) that he was a professional, 10 (3.5%) that he was a secretary or clerical worker, 3 (1.0%) that he was a homemaker, and 1 (0.3%) that he was a student. Thirty-two (11.1%) participants checked the "other" occupation category indicating that their father's occupation was not mentioned in the questionnaire.

Among the abstainers, 6 (17.1%) reported that their father or primary father figure was a service worker, 6 (17.1%) that he was a laborer, 5 (14.3%) that he was a business manager, 4 (11.4%) that he was a business owner, 4 (11.4%) that he was a craftsman, 3 (8.6%) that he was a foreman or sales manager, and 2 (5.7%) that he was a secretary or clerical worker. Three of the abstainers (8.6%) checked the "other" occupation category indicating that their father's occupation was not specifically mentioned in the questionnaire, and none of the abstainers reported that their father or primary father figure was a homemaker or student.

In the user/experimenter category, 49 participants (26.3%) reported that their father or primary father figure was a service worker, 36 (19.4%) that he was a laborer, 25 (13.4%) that he was a craftsman, 14 (7.5%) that he was a business manager, 13 (7.0%) that he was a foreman or sales manager, 10 (5.4%) that he was a business owner, 8 (4.3%) that he was a professional, 5 (2.7%) that he was a secretary or clerical worker, 2 (1.1%) that he was a homemaker, and 1 (0.5%) that he was a student. Twenty-three (12.4%) checked the "other" occupation category indicating that their father's occupation was not specifically mentioned in the questionnaire.

The largest group of respondents in the abuser category (n=14, 20.6%) reported that their father or primary father figure was a laborer. Thirteen (19.1%) reported that he was a service worker, 12 (17.6%) that he was a business owner, 7 (10.3%) that he was a craftsman, 5 (7.4%) that he was a professional, 5 (7.4%) that he was a business manager, 3 (4.4%) that he was a secretary or clerical worker, 2 (2.9%) that he was a foreman or sales manager, and 1 (1.5%) that he was a homemaker. Six (8.8%) of the respondents in the abuser category checked the "other" occupation category indicating that their father's occupation was not specifically mentioned on the questionnaire.

The occupations of the fathers were used in a chi-square analysis to determine if they were associated with the level of adolescent substance use. The resultant chi-square of 18.10 was not statistically significant at an alpha level of .05 with 20 degrees of freedom. This finding provided evidence that the father's occupation and substance use category were independent of one another.

The mothers' occupations were also crosstabulated by substance use category. Table 13 presents the results of this analysis.

Table 13
Crosstabulation
Mother's Occupation
by Substance Use Category

Mother's Occupation	Substance Use Category						Total	
	Abstainer		User/Experimenter		Abuser			
	N	%	N	%	N	%	N	%
Professional	3	8.8	24	12.8	9	13.0	36	12.4
Business Manager	1	2.9	4	1.4	7	10.1	12	4.1
Business Owner	1	2.9	10	5.3	4	5.8	15	5.2
Secretary/Clerical	11	32.4	60	32.1	27	39.1	98	33.8
Foreman/Sales Manager	0	0.0	5	1.7	0	0.0	5	1.7
Craftsman	2	5.9	2	0.7	1	1.4	5	1.7
Service worker	2	5.9	10	5.3	6	8.7	18	6.2
Laborer	1	2.9	25	13.4	5	7.2	31	10.7
Homemaker	11	32.4	36	19.3	9	13.0	56	19.3
Student	0	0.0	0	0.0	0	0.0	0	0.0
Other	2	5.9	11	5.9	1	1.4	14	4.8
Total	34	100.0	187	100.0	69	100.0	290	100.0

$\chi^2(18)=27.54, p=.069$

The majority of the participants (n=98, 33.8%) reported that their mother or primary mother figure was a secretary or clerical worker. Fifty-six (19.3%) indicated that she was a homemaker, 36 (12.4%) that she was a professional, 31 (10.7%) that she was a laborer, 18 (6.2%) that she was a service worker, 15 (5.2%) that she was a business owner, 12 (4.1%) that she was a business manager, 5 (1.7%) that she was a foreman or sales manager, and 5 (1.7%) that she was a craftsman. Fourteen of the students (4.8%) checked the "other" occupation category indicating that their mother's occupation was not specifically

mentioned in the questionnaire. None of the participants reported that their mother or primary mother figure was a student.

Among the abstainers, 11 (32.4%) indicated that their mother or primary mother figure was a secretary or clerical worker, 11 (32.4%) reported that she was a homemaker, 3 (8.8%) that she was a professional, 2 (5.9%) that she was a craftsman, 2 (5.9%) that she was a service worker, 1 (2.9%) that she was a business manager, 1 (2.9%) that she was a business owner, and 1 (2.9%) that she was a laborer. Three of the abstainers checked the "other" occupation category indicating that their mother's occupation was not specifically mentioned in the questionnaire, and none of the abstainers reported that their mother or primary mother figure was a foreman/sales manager or student.

In the user/experimenter category, 60 participants (32.1%) reported that their mother or primary mother figure was a secretary or clerical worker. Thirty-six (19.3%) reported that she was a homemaker, 25 (13.4%) that she was a laborer, 24 (12.8%) that she was a professional, 10 (5.3%) that she was a business owner, 10 (5.3%) that she was a service worker, 5 (1.7%) that she was a foreman or sales manager, 4 (1.4%) that she was a business manager, and 2 (0.7%) that she was a craftsman. Eleven (5.9%) checked the "other" occupation category indicating that their mother's occupation was not specifically mentioned in the questionnaire. None of the user/experimenters reported that their mother or primary mother figure was a student.

The largest group of respondents in the abuser category (n=27, 39.1%) reported that their mother or primary mother figure was a secretary or clerical worker. Nine (13.0%) indicated that she was a professional, 9 (13.0%) that she

was a homemaker, 7 (10.0%) that she was a business manager, 6 (8.7%) that she was a service worker, 5 (7.2%) that she was a laborer, 4 (5.8%) that she was a business owner, and 1 (1.4%) that she was a craftsman. One participant (1.4%) checked the "other" occupation category indicating that their mother's occupation was not mentioned in the questionnaire. None of the abusers reported that their mother or primary mother figure was a foreman/sales manager or student.

To determine if there was an association between mother's occupation and substance use category, chi-square tests for independence were used. The obtained chi-square value of 27.54 was not statistically significant at an alpha level of .05 with 12 degrees of freedom. From this finding, it appears that the mother's occupation is not associated with their children's substance use category.

The students were asked to identify their mother's and father's education levels. The responses to these questions were crosstabulated by substance use category. The results of the analysis for the father's education level are presented in Table 14.

Table 14

Crosstabulation
Father's Education Level by
Substance Use Category

Father's Education	Substance Use Category						Total	
	Abstainer		User/Experimenter		Abuser			
	N	%	N	%	N	%	N	%
Graduate School	3	8.8	10	6.0	6	9.4	19	7.2
College	2	5.9	23	13.8	13	20.3	38	14.3
Some College	9	26.5	37	22.2	14	21.9	60	22.6
Technical School/Associate Degree	3	8.8	14	8.4	4	6.3	21	7.9
High School	12	35.3	69	41.3	22	34.4	103	38.9
Some High School	4	11.8	11	6.6	4	6.3	19	7.2
Middle School or less	1	2.9	3	1.8	1	1.6	5	1.9
Total	34	100.0	167	100.0	68	100.0	265	100.0
$\chi^2 (12)=6.88, p=.866$								

The majority of the participants (n=103, 38.9%) reported that their father or primary father figure graduated from high school. Sixty (22.6%) indicated that he had some college education, 38 (14.3%) that he graduated from college, 21 (7.9%) that he completed technical school or earned an associate degree, 19 (7.2%) that he completed graduate school, 19 (7.2%) that he completed some high school, and 5 (1.9%) that he had a middle school or less education.

Among the abstainers, 12 (35.3%) reported that their father or primary father figure graduated from high school. Nine (26.5%) indicated that he had some college education, 4 (11.8%) that he completed some high school, 3

(8.8%) that he completed graduate school, 3 (8.85%) that he completed technical school or earned an associate degree, 2 (5.9%) that he completed college, and 1 (2.9%) that he had a middle school or less education.

In the user/experimenter category, 69 (41.3%) reported that their father or primary father figure graduated from high school, 37 (22.2%) that he had some college education, 23 (13.8%) that he graduated from college, 11 (6.6%) that he completed some high school, 10 (6.0%) that he completed graduate school, and 3 (1.8%) that he had a middle school or less education.

The largest group of respondents in the abuser category (n=22, 34.4%) reported that their father or primary father figure graduated from high school. Fourteen (21.9%) indicated that he had some college education, 13 (20.3%) that he graduated from college, 6 (9.4%) that he completed graduate school, 4 (6.3%) that he completed technical school or earned an associate degree, 4 (6.3%) that he completed some high school, and 1 (1.6%) that he had a middle school or less education.

A chi-square test for independence was used to determine if there was an association between the father's education level and substance use category. The resultant chi-square value of 6.88 was not statistically significant at an alpha level of .05 with 12 degrees of freedom. Based on this finding, the substance use category was independent of the father's education level.

The mothers' education levels were crosstabulated by their children's substance use category. The results of this analysis are presented in Table 15.

Table 15
Crosstabulation
Mother's Education Level
by Substance Use Category

Mother's Education	Substance Use Category						Total	
	Abstainer		User/Experimenter		Abuser			
	N	%	N	%	N	%	N	%
Graduate School	4	11.1	17	10.1	5	7.7	26	9.6
College	5	13.9	18	10.7	14	21.5	37	13.7
Some College	6	16.7	37	21.9	14	21.5	57	21.1
Technical School/Associate Degree	2	5.6	5	3.0	1	1.5	8	3.0
High School	18	50.0	76	45.0	28	43.1	122	45.2
Some High School	4	2.8	14	8.3	3	4.6	18	6.7
Middle School or less	0	0.0	2	1.2	0	0.0	2	0.7
Total	36	100.0	169	100.0	68	100.0	265	100.0
$\chi^2(12)=9.42, p=.667$								

The majority of the participants (n=122, 45.2%) reported that their mother or primary mother figure graduated from high school. Fifty-seven (21.1%) reported that she had some college education, 37 (13.7%) that she graduated from college, 26 (9.6%) that she completed graduate school, 18 (6.7%) that she completed some high school, 8 (3.0%) that she completed technical school or earned an associate degree, and 2 (0.7%) that she had a middle school or less education.

Among the abstainers, 18 (50.0%) reported that their mother or primary mother figure graduated from high school, 6 (16.7%) that she had some college education, 5 (13.9%) that she graduated from college, 4 (11.1%) that she completed graduate school, 4 (2.8%) that she completed some high school, and

2 (5.6%) that she completed technical school or earned an associate degree.

None of the abstainers reported that their mother or primary mother figure had a middle school or less education.

In the user/experimenter category, 76 (45.0%) reported that their mother or primary mother figure graduated from high school, 37 (21.9%) that she had some college education, 18 (10.7%) that she graduated from college, 17 (10.1%) that she completed graduate school, 14 (8.3%) that she completed some high school, and 2 (1.2%) that she had a middle school or less education.

The largest group of respondents in the abuser category (n=28, 43.1%) reported that their mother or primary mother figure graduated from high school. Fourteen (21.5%) indicated that she graduated from college, 14 (21.5%) that she had some college education, 5 (7.7%) that she completed graduate school, 3 (4.6%) that she completed some high school, and 1 (1.5%) that she completed technical school or earned an associate degree. None of the abusers reported that their mother or primary mother figure had a middle school or less education.

A chi-square test for independence was used to determine if the mother's education level was associated with the student's substance use category. The obtained chi-square value of 9.42 was not statistically significant at an alpha level of .05 with 12 degrees of freedom, indicating that the mother's education level was independent of substance use category.

The father's and mother's occupations and education levels were used to determine their family's socioeconomic status. Employing the *Four Factor Index of Social Status* procedure developed by Hollingshead (1975), occupation types and education levels were appropriately weighted and the outcomes scores

categorized into five socioeconomic classes. If both parents were present in the home and both were working, their individual socioeconomic statuses were averaged to determine the family's socioeconomic level. If both parents were in the home but only one was gainfully employed, the socioeconomic status of that parent was used, and if there was only one parent in the home, his/her socioeconomic level was used as the family's socioeconomic status. The obtained family socioeconomic statuses were then crosstabulated by substance use group. The results of this analysis are presented in Table 16.

Table 16
Crosstabulation
Family Socioeconomic Status
by Substance Use Category

Family Socioeconomic Status	Substance Use Category						Total	
	Abstainer		User/Experimenter		Abuser			
	N	%	N	%	N	%	N	%
Lower Class	5	15.6	16	9.7	9	13.8	30	11.5
Lower Middle Class	8	25.0	25	15.2	19	29.2	52	19.8
Middle Class	10	31.3	53	32.1	18	27.7	81	30.9
Upper Middle Class	8	25.0	59	35.8	17	26.2	84	32.1
Upper Class	1	3.1	12	7.3	2	3.1	15	5.7
Total	32	100.0	165	100.0	65	100.0	265	100.0
$\chi^2(8)=10.47, p=.234$								

Chi-square test for independence was used to determine if socioeconomic status was independent of substance use category. The chi-square value of 10.47 obtained on this analysis was not statistically significant at an alpha level of .05 with 8 degrees of freedom. This result indicated that socioeconomic status

was independent of substance use category.

The students were asked to identify who they lived with at the time they completed the survey. Their responses were crosstabulated by substance use category. Table 17 presents the results of this analysis.

Table 17
Crosstabulation
Who Participants Lived With At the Time of the Study
by Substance Use Category

Lived With at the Time of the Study	Substance Use Category						Total	
	Abstainer		User/Experimenter		Abuser			
	N	%	N	%	N	%	N	%
Mother and Father	25	69.4	118	63.1	36	61.3	179	61.3
Mother Only	6	16.7	26	13.9	11	15.9	43	14.7
Father Only	0	.0	5	2.7	3	4.3	8	2.7
Mother and Stepfather	4	11.1	21	11.2	10	14.5	35	12.0
Father and Stepmother	1	2.8	7	3.7	4	5.8	12	4.1
Other	0	0	10	5.3	5	7.2	15	5.1
Total	36	100.0	187	100.0	69	100.0	292	100.0

$\chi^2(10)=6.95, p=.731$

The majority of participants (n=179, 61.3%) reported that they were living with their mother and father at the time of the survey. Forty-three (14.7%) indicated they were living with their mother only, 35 (12.0%) were living with their mother and stepfather, 12 (4.1%) were living with their father and stepmother, and 8 (2.7%) were living with their father only. Fifteen participants (5.1%) checked the "other" category indicating that at the time of the study, they were

living with someone not specifically mentioned on the questionnaire.

Among the abstainers, 25 (69.4%) indicated that they were living with their mother and father at the time of the survey, 6 (16.7%) that they were living with their mother only, 4 (11.1%) that they were living with their mother and stepfather, and 1 (2.8%) they were living with their father and stepmother. None of the abstainers reported that at the time of the survey, they were living with their father only or with someone not specifically mentioned on the questionnaire.

In the user/experimenter category, 118 participants (63.7%) reported that they were living with their mother and father at the time of the study. Twenty-six (13.9%) that they were living with their mother only, 21 (11.2%) that they were living with their mother and stepfather, 7 (3.7%) that they were living with their father and stepmother, and 5 (2.7%) that they were living with their father only. Ten of the user/experimenters (5.3%) checked the "other" category indicating that at the time of the survey, they were living with someone not specifically mentioned on the questionnaire.

The largest group of respondents in the abuser category ($n=36$, 61.3%) reported that they were living with their mother and father at the time of the study. Eleven (15.9%) indicated that they were living with their mother only, 10 (14.5%) that they were living with their mother and stepfather, 4 (5.8%) that they were living with their father and stepmother, and 3 (4.3%) that they were living with their father only. Five abusers (7.2%) checked the "other" category indicating that at the time of the survey, they were living with someone not specifically mentioned on the questionnaire.

To determine if there was an association between substance use group and who the student was living with at the time of the study, a chi-square test of independence was conducted. The chi-square value of 6.95 obtained on this analysis was not statistically significant at an alpha level of .05 with 10 degrees of freedom. Based on this result, there does not appear to be an association between substance use group and the student's living arrangements at the time of the survey.

The students were asked to identify who they lived with most of the time during high school. Their responses were crosstabulated by substance use category. Table 18 presents the results of this analysis.

Table 18
Crosstabulation
Who Participants Lived With Most of the Time During High School
by Substance Use Category

Lived With Most During High School	Substance Use Category						Total	
	Abstainer		User/Experimenter		Abuser		N	%
	N	%	N	%	N	%		
Mother and Father	24	66.7	123	65.8	31	59.4	188	64.4
Mother Only	6	16.7	28	15.0	11	15.9	45	15.4
Father Only	0	0	3	1.6	2	2.9	5	1.7
Mother and Stepfather	4	11.1	20	10.7	10	14.5	34	11.6
Father and Stepmother	1	2.8	6	3.2	3	4.3	10	3.4
Other	1	2.8	7	3.7	2	2.9	10	3.4
Total	36	100.0	187	100.0	69	100.0	292	100.0
$\chi^2 (10)=2.65, p=.989$								

The majority of respondents (n=188, 64.4%) indicated that they lived with

their mother and father most of the time during high school. Forty-five (15.4%) indicated that they lived most of the time with their mother only, 34 (11.6%) that they lived most of the time with their mother and stepfather, 10 (3.4%) that they lived most of the time with their father and stepmother, and 5 (1.7%) that they lived most of the time with their father only. Ten participants (3.4%) checked the "other" category indicating that they lived most of the time during high school with someone not mentioned on the questionnaire.

In the abstainer category, 24 (66.7%) reported that they lived with their mother and father most of the time during high school, 6 (16.7%) that they lived most of the time with their mother only, 4 (11.1%) that they lived most of the time with their mother and stepfather, and 1 (2.8%) that they lived most of the time with their father and stepmother. None of the abstainers indicated that they lived most of the time with their father only. One abstainer checked the "other" category indicating that they lived most during high school with someone not mentioned on the questionnaire.

Among the user/experimenters, 123 (65.8%) indicated that they lived with their mother and father most of the time during high school. Twenty-eight (15.0%) indicated that they lived most of the time with their mother only, 20 (10.7%) that they lived most of the time with their mother and stepfather, 6 (3.2%) that they lived most of the time with their father and stepmother, and 3 (1.6%) that they lived most of the time with their father only. Seven of the user/experimenters (3.7%) checked the "other" category indicating that they lived most of the time during high school with someone not mentioned on the questionnaire.

The largest group of respondents in the abuser category (n=31, 59.4%) reported that they lived with their mother and father most of the time during high school. Eleven (15.9%) indicated that they lived most of the time with their mother only, 10 (14.5%) that they lived most of the time with their mother and stepfather, 3 (4.3%) that they lived most of the time with their father and stepmother, and 2 (2.9%) that they lived with their father only most of the time. Two of the abusers (2.9%) checked the "other" category indicating that they lived most of the time during high school with someone not mentioned on the questionnaire.

A chi-square test for independence was used to determine if there was an association between who the student lived with the most during high school and substance use group. The obtained chi-square value of 2.65 was not statistically significant at an alpha level of .05 with 10 degrees of freedom. This result provided evidence that who the student lived with most of the time during high school was not associated with their substance use category.

The students were asked if they considered anyone in their family to be an alcoholic or a substance abuser. Their responses were crosstabulated by substance use category. Table 19 presents the results of this analysis.

Table 19
Crosstabulation
Does Student Consider Anyone in Family to be an Alcoholic or Substance
Abuser
by Substance Use Category

Consider Family Member Alcoholic/Abuser	Substance Use Category						Total	
	Abstainer		User/Experimenter		Abuser		N	%
	N	%	N	%	N	%		
Yes	14	38.9	80	43.0	33	47.8	127	43.6
No	22	61.1	106	57.0	36	53.3	164	56.7
Total	36	100.0	186	100.0	69	100.0	291	100.0

$\chi^2 (2) = .85, p = .653$

The largest group of respondents (n=164, 56.7) reported that they did not consider any member of their family to be an alcoholic or substance abuser, while 127 respondents (43.%) reported that they did consider a member of their family to be an alcoholic or substance abuser. In the abstainer category, 22 participants (61.1%) indicated that they did not consider any member of their family to be an alcoholic or substance abuser, while 14 (38.9%) did. In the user/experimenter category, 106 respondents (57.0%) did not consider a family member to be an alcoholic or substance abuser, and 80 (43.0%) did. Among the abusers, 36 (53.3%) did not consider any family member to be an alcoholic or substance abuser, and 33 (47.8%) did.

To determine if there was an association between the student's perception of the presence or absence of alcoholism or substance abuse in their family and their substance abuse category, chi-square test for independence was used. The resultant chi-square value of .85 was not statistically significant at an alpha level of .05 with 2 degrees of freedom. This finding indicated that the

perceived prevalence of family alcoholism or substance abuse was independent of the student's substance use category.

Description of Continuous Variables

Scores for the students' attitudes toward their mothers and fathers and for the students' three personality dimensions were obtained using the protocols developed by the authors of the respective scales. Descriptive statistics were used to summarize these scores by substance use category. The results of the analysis of the respondents' attitudes toward their mothers and fathers by substance use category are presented in Table 20.

Table 20

Descriptive Statistics Attitude Toward Parents by Substance Use Category

Attitude Toward Parents by Substance Use Category	Number	Mean	SD	Median	Range	
					Minimum	Maximum
Mother						
Abstainer	36	15.61	11.32	14.33	0	36.67
User/Experimenter	186	23.84	20.41	17.33	0	96.00
Abuser	69	22.96	16.64	18.68	0	76.00
Father						
Abstainer	36	22.99	19.30	16.33	0	70.00
User/Experimenter	184	26.69	21.82	19.33	0	96.00
Abuser	68	28.58	21.06	26.00	0	92.00

Attitude Toward Mother. Responses on this scale indicated the extent, degree, or severity of the students' perceived problems with their mothers. Scores on this scale could range from 0 to 100 with higher scores indicating greater perceived problems.

Students in the abstainer group had a mean score of 15.61 (sd=11.32)

and a median score of 14.33. The scores for this group ranged from 0 to 36.67. For students in the user/experimenter group, the scores ranged from 0 to 96, with a median of 17.33 and a mean score of 23.84 (sd=20.41). Students categorized as abusers had a mean score of 22.96 (sd=16.64), and a median of 18.68. The scores on this subscale ranged from 0 to 76.

Attitude Toward Father. Questions on this scale were identical to those on the Attitude Toward Mother scale except that the word father was used instead of the word mother. Scores on this scale could also range from 0 to 100, with higher scores indicating greater perceived problems within the father-adolescent relationship.

Students in the abstainer group had a mean score of 22.99 (sd=19.30) and a median score of 16.33. Their scores ranged from 0 to 70. User/experimenters had an average score of 26.69 (sd=21.82) and a median score of 19.33. Their scores ranged from 0 to 96. Students in the abuser category had scores that ranged from 0 to 92, with a median of 26.00 and a mean score of 28.58 (sd=21.06).

The three subscales measuring personality dimensions were summarized using descriptive statistics. The results of this analysis are presented in Table 21.

Table 21
Descriptive Statistics
Personality Dimensions
by Substance Use Category

Personality Dimension by Substance Use Category	Number	Mean	SD	Median	Range	
					Minimum	Maximum
Novelty Seeking						
Abstainer	36	16.50	4.04	17	8	24
User/Experimenter	187	18.60	4.63	18	0	29
Abuser	69	20.10	3.87	20	13	28
Harm Avoidance						
Abstainer	36	12.61	6.72	11	3	29
User/Experimenter	187	13.68	7.45	14	0	29
Abuser	69	12.91	6.69	14	0	29
Reward Dependence						
Abstainer	36	20.08	4.70	20	7	27
User/Experimenter	187	19.73	4.88	20	0	29
Abuser	69	19.91	4.57	21	8	29

Personality Dimensions. Responses on this instrument identify three dimensions of personality variation: novelty seeking, harm avoidance, and reward dependence. Higher scores on each scale indicate increased incidence of the measured behaviors.

The novelty seeking scale measures the degree to which a respondent actively engages in exploratory activity, responds with intense exhilaration and excitement to novel stimuli, and is easily bored, extravagant, impulsive, and disorderly. Actual scores on this subscale could range from 0 to 34 with higher scores indicating greater incidence of this behavior. Students in the abstainer category had scores that ranged from 8 to 24 with a mean score of 16.50 (sd=4.04) and a median score of 17. For students in the user/experimenter group, the scores ranged from 0 to 29 with a mean score of 18.63 (sd=4.63) and a median score of 18. Students categorized as abusers had scores that ranged

from 13 to 28 with a mean score of 20.10 ($sd=3.87$) and a median score of 20.

The harm avoidance scale measures the degree to which a respondent actively engages in avoidant behaviors, responds intensely to aversive stimuli, is cautious, careful, fearful, and tense. Actual scores on this scale could range from 0 to 34 with higher scores indicating greater incidence of this behavior. Students in the abstainer category had scores that ranged from 3 to 29 with a mean score of 12.61 ($sd=6.72$) and a median score of 11. For students in the user/experimenter category, the scores ranged from 0 to 29 with a mean score of 13.68 ($sd=7.45$) and a median score of 14. Students categorized as abusers had scores that ranged from 0 to 29 with a mean score of 12.91 ($sd=6.69$) and a median score of 14.

The reward dependence scale measures the degree to which a respondent actively pursues reward or relief from punishment, responds intensely to signals of approval, and is sensitive, sociable, and dependent. Actual scores on this scale could range from 0 to 30 with higher scores indicating greater incidence of this behavior. Students in the abstainer category had scores that ranged from 7 to 27 with a mean score of 20.08 ($sd=4.70$) and a median score of 20. For students in the user/experimenter group, the scores ranged from 0 to 29 with a mean score of 19.73 ($sd=4.88$) and a median score of 20. Students categorized as abusers had scores that ranged from 8 to 29 ($sd=4.57$) with a mean score of 19.91 ($sd=4.57$) and a median score of 21.

Research Hypotheses

Four hypotheses were established for this study. These hypotheses were answered using a combination of multiple analysis of variance and one-way

analysis of variance procedures. All decisions on the statistical significance of the findings were made using an alpha level of .05.

H₁: Adolescents at each of three levels of involvement with substances: abstention, use/experimentation, and abuse, will differ on three dimensions of personality variation: novelty seeking, harm avoidance, and reward dependence.

H_{1a}: Adolescents who report abstention from involvement with substances are more likely to be lower in novelty seeking behavior than adolescents who report experimentation or abuse levels of involvement with substances.

H_{1b}: Adolescents who report abstention from involvement with substances are more likely to be higher in harm avoidance behavior than adolescents who report experimentation or abuse levels of involvement with substances.

H_{1c}: Adolescents who report abstention from involvement with substances are more likely to be higher in reward dependence behavior than adolescents who report experimentation or abuse levels of involvement with substances.

Multiple analysis of variance (MANOVA) was used to determine if there were differences in the three dimensions of personality variation: novelty seeking, harm avoidance, and reward dependence by substance use category. Table 21 provides the descriptive statistics, including means and standard deviations, for the three personality dimensions by substance use level. Table 22 presents the findings of the MANOVA.

Table 22

Multiple Analysis of Variance
Personality Variations by Substance Use

Hotelling's Trace	F ratio	Degrees of Freedom	Sig of F
.06	2.95**	6/572	.008

**p<.01

The Hotelling's trace obtained from the MANOVA procedure was .06. The associated F ratio of 2.95 was statistically significant at an alpha level of .05 with 6 and 572 degrees of freedom. Based on this result there appears to be a statistically significant difference among the three groups of students on personality variation.

To determine which of the three personality variations were contributing to the significant finding, results of the univariate F tests were examined. Table 23 presents the results of these analyses.

Table 23
Univariate F Tests
Personality Variations by Substance Use Category

Personality Variations	Sum of Squares	DF	Mean Squares	F ratio	Sig of F
Novelty Seeking Between Within	311.66 5570.21	2 289	155.83 19.27	8.09**	<.01
Harm Avoidance Between Within	53.64 14940.42	2 289	26.82 51.70	.52	.596
Reward Dependence Between Within	4.70 6629.32	2 289	2.35 22.94	.10	.903

**p<.01

The F ratio of 8.09 obtained for the comparison of novelty seeking among the three levels of substance use was statistically significant at an alpha level of .05 with 2 and 289 degrees of freedom. This finding showed that novelty seeking differed significantly among abstainers, user/experimenters, and abusers. To determine which of the three levels of substance use were differing from the others, Scheffé's a posteriori test was used to compare all possible pairwise

comparisons. Significant differences were found between the abstainers ($m=16.50$, $sd=4.04$) and user/experimenters ($m=18.60$, $sd=4.63$) and abusers ($m=20.10$, $sd=3.87$). The difference between the user/experimenters and abusers was also statistically significant. Based on these findings, students in the abstainer group appeared to have significantly less novelty seeking personality variations than the other two groups, with abusers having the highest levels of novelty seeking.

The differences among the three groups of students based on their use of substances were not statistically significant for either harm avoidance or reward dependence. As a result of mixed findings for the three personality variations, a decision to reject the null hypothesis could not be made.

H_2 : Adolescents at each of the three levels of involvement with substances: abstention, use/experimentation, or abuse will differ in their self-reported attitude toward their father or primary male family figure. The anticipated ranking of the adolescents from most positive attitude to most negative attitude is:

Abstainers > User/experimenters > Abusers.

A one-way analysis of variance (ANOVA) procedure was used to test this hypothesis. The dependent variable was attitude toward father. The scores on this scale were obtained using the instructions provided by the author of the scale. Lower scores on this scale were indicative of more positive attitudes toward the father, and higher scores reflected increased problematic attitudes toward the father. The independent variable was the level of substance use: abstention, use/experimentation, or abuse. Table 24 presents the results of this analysis.

Table 24
One-way Analysis of Variance
Attitude Toward Father by Substance Use Category

Substance Use	Number	Mean	SD	DF	F ratio	Sig of F
Abstainer	36	22.99	19.30	2/285	.81	.448
User/Experimenter	184	26.69	21.82			
Abuser	68	28.58	21.06			

The results of the one-way ANOVA provided no evidence of statistically significant differences among the three groups of students. While abstainers had lower scores on this measure than user/experimenters and abusers, this difference was not sufficient to be considered statistically significant. As a result, the null hypothesis was retained.

H₃: Adolescents at each of the three levels of involvement with substances: abstinence, use/experimentation, or abuse, will differ in their self-reported attitude toward their mother or primary female family figure. The anticipated ranking of the adolescents from most positive attitude to most negative attitude is:

Abstainers > User/experimenter > Abusers

The scores on attitude toward mothers were used as the dependent variable in a one-way ANOVA. The level of substance use was used as the independent variable in this analysis. Scores on attitude toward mother were obtained using instructions from the author, with lower scores indicating more positive attitudes toward the mother and higher scores indicating problematic attitudes. Table 25 presents the results of this analysis.

Table 25
One-way Analysis of Variance
Attitude Toward Mother by Substance Use Category

Substance Use	Number	Mean	SD	DF	F ratio	Sig of F
Abstainer	36	15.61	11.32	2/288	2.95	.054
User/Experimenter	184	23.84	20.49			
Abuser	68	22.96	16.64			

The results of the one-way ANOVA was not statistically significant indicating that the three groups of students did not differ in their attitudes toward their mothers. The obtained scores for the user/experimenters were higher than those of the abstainers or abusers, although these differences were not statistically significant. As a result, the null hypothesis of no difference among the three groups on attitude toward mother is retained.

H₄: Adolescents, at four different levels of attitude toward their parents; high positive attitude toward father plus high positive attitude toward mother, high positive attitude toward father plus low positive attitude toward mother, low positive attitude toward father plus high positive attitude toward mother, and low positive attitude toward father plus low positive attitude toward mother, will differ in the degree of their involvement with substances.

The groupings for the students were developed by using a median split on the scores for attitude toward mother and attitude toward father. The distribution of the students in the four groups is presented in Table 26.

Table 26
Frequency Distribution
Student Groupings

Grouping by Attitude Toward Mother and Father	Frequency	Percent
High Father/High Mother	149	52.1
High Father/Low Mother	39	13.6
Low Father/High Mother	64	22.4
Low Father/Low Mother	34	11.9
Total	286	100.0

The majority of the students (n=149, 52.1%) had high attitudes regarding both their mothers and fathers. Thirty-nine (13.6%) students had high positive attitudes regarding their fathers and low positive attitudes regarding their mothers. Low positive attitudes regarding their fathers and high positive attitudes regarding their mothers were found among 64 (22.4%) of the students. Thirty-four (11.9%) students' scores reflected low positive attitudes for both mother and father.

These groupings were used as the independent variables in a one-way analysis of variance. The amount of substance use reported by the students on each of the individual substances listed on the survey were summed to obtain a total score representing the degree of substance use. The degree of substance use was used as the dependent variable in a one-way analysis of variance. The results of this analysis are presented in Table 27.

Table 27

One-Way Analysis of Variance
Degree of Substance Use by Attitude Toward Parents

Source of Variance	Sum of Squares	DF	Mean Square	F Ratio	Sig of F
Between Groups	170.74	3	56.91	1.57	.197
Within Groups	10215.79	282	36.23		
Total	10386.54	285			

The F ratio of 1.57 obtained on the one-way analysis of variance was not statistically significant at an alpha level of .05 with 3 and 282 degrees of freedom. This result indicated that the degree of substance use did not differ among the students relative to their attitudes toward mother and father. To further investigate the lack of statistically significant differences among the four groups, descriptive statistics were obtained on the degree of substance use by attitude toward parent. Table 28 presents the results of these analyses.

Table 28

Descriptive Statistics
Parent Attitude Groupings

Parent Attitude Groupings	Number	Mean	SD
High Father/High Mother	149	5.56	5.30
High Father/Low Mother	39	7.08	6.44
Low Father/High Mother	64	7.09	6.40
Low Father/Low Mother	34	7.17	7.58

The highest mean score ($m=7.17$, $sd=7.58$) was obtained for students who had low father/low mother attitudes. Those whose attitudes were mixed, low father/high mother ($m=7.09$, $sd=6.40$) and high father/low mother ($m=7.08$,

sd=6.44) had similar scores. Students with high father/high mother attitudes (m=5.30, sd=5.30) had the lowest scores on the degree of substance use. Based on this finding, the null hypothesis of no difference was retained.

Summary

Results of the statistical analyses used to describe the sample and test the four hypotheses posed for this study have been presented in this chapter. The discussion of these findings is presented in Chapter V.

Chapter V

SUMMARY, DISCUSSION AND CONCLUSIONS

This chapter presents the research findings in the context of three basic objectives. First, the relationship of the assessed demographics to level of substance use is discussed with specific focus on predictors of abstention behavior. Second, the data are presented in terms of their support or non-support of the hypotheses, and third, the findings are interpreted and placed in the context of the literature reviewed. In addition, this chapter critically examines the limitations of the study, provides suggestions for practitioners, poses questions, and offers suggestions for future research.

Demographic Factors and the Level of Substance Use

Gender, age, grade point, ethnicity, religiosity, parent's education, parent's occupation, living arrangements, and the presence of substance abuse in the family were assessed and analyzed in terms of the three classification levels of substance involvement: abstention, use/experimentation, and abuse. Results showed that grade point average was directly related to the level of substance involvement with abstainers achieving significantly higher grade point averages than user/experimenters and abusers, and user/experimenters achieving significantly higher grade point averages than abusers. A relationship was also found between levels of substance use and religiosity. Abstainers were significantly more likely to consider religion extremely important in their lives and to attend religious services or activities more frequently than the other two groups. These results were not unexpected since abstainers tend to

demonstrate an orientation toward conventionality including greater expectations for academic achievement and greater involvement in religious activities (Brook, Brook, Gordon, Whiteman, & Cohen, 1990; Jessor & Jessor, 1975; Kandel, 1982, 1990; Knupfer & Room, 1970; Shedler & Block, 1990).

There were no differences among the three groups of students in terms of gender distribution and age. Nor was there an association between level of substance use and ethnicity, parents' education, parents' occupation, living arrangements, and the presence of substance abuse in the family. This would indicate that environmental circumstances, socioeconomic level, and organismic variables are not as important in determining abstention as personally held values are.

Discussion of the Hypotheses

The following section discusses the multivariate and univariate analyses in support or non-support of the study hypotheses.

H₁: Adolescents at each of three levels of involvement with substances: abstention, use/experimentation, and abuse, will differ on three dimensions of personality variation: novelty seeking, harm avoidance, and reward dependence.

H_{1a}: Adolescents who report abstention from involvement with substances are more likely to be lower in novelty seeking behavior than adolescents who report experimentation or abuse levels of involvement with substances.

H_{1b}: Adolescents who report abstention from involvement with substances are more likely to be higher in harm avoidance behavior than adolescents who report experimentation or abuse levels of involvement with substances.

H_{1c}: Adolescents who report abstention from involvement with substances are more likely to be higher in reward dependence behavior than adolescents who report experimentation or abuse levels of

involvement with substances.

Results of the multivariate analysis of H_1 indicated a statistically significant difference among the three groups of students: abstainers, user/experimenters, and abusers on personality variation. Univariate analyses of H_{1a} , H_{1b} , and H_{1c} showed that novelty seeking was the personality variation contributing to the significant finding. Scheffe's a posteriori analysis found a direct correlation between novelty seeking personality variation and level of substance use with the abstainer group having significantly less novelty seeking personality variation than the other two groups, and abusers having significantly higher levels of novelty seeking. No significant differences were found among abstainers, user/experimenters, and abusers for either harm avoidance or reward dependence personality variations.

These results are only partially consistent with past research that associated a personality configuration low in novelty seeking and high in reward dependence and harm avoidance with abstention behavior in adolescents (Cloninger, Sigvardsson, and Bohman, 1988; Earlywine, Finn, Peterson, & Pihl, 1992; Wills, Vaccaro, and McNamara, 1994). Two factors may have contributed to this finding. First, information on abstention was a byproduct of the reviewed studies. The association was inferred because the opposite profile, high novelty seeking and low harm avoidance and reward dependence was significantly correlated with substance abuse. The findings in the present study indicate that the personality profiles associated with abstention are not necessarily the opposite of those associated with substance abuse. Personal value systems,

specifically high priority on academic achievement and religiosity as measured in this study, appear to play a major mediating role.

Second, the three-factor model of personality operationalized in the Tridimensional Personality Questionnaire (Cloninger, 1987b) was chosen for this study in an effort to closely replicate the work done by Cloninger (1986, 1987a) and Cloninger, Sigvardsson, and Bohman (1988) who found a strong association between high novelty seeking, low harm avoidance, and low reward dependence and substance abuse, and inferred an opposite association with abstention. Since the present study only partially supported their findings in terms of that particular personality structure, it may be that a broader instrument that assesses five or seven personality factors may reveal a cogent personality configuration specific to abstention behavior.

The remaining hypotheses addressed the students' self-reported attitudes toward their parents.

H₂: Adolescents at each of the three levels of involvement with substances: abstention, use/experimentation, or abuse will differ in their self-reported attitude toward their father or primary male family figure. The anticipated ranking of the adolescents from most positive attitude to most negative attitude is:

Abstainers > User/experimenters > Abusers.

Results of the one-way analysis of variance provided no evidence of statistically significant differences among the three groups of students. While abstainers had lower scores on this measure indicating less perceived conflict with their fathers than user/experimenters and abusers reported, this difference was not sufficient to be considered statistically significant. Similar results were

obtained on the same measure of the adolescent/maternal relationship.

H₃: Adolescents at each of the three levels of involvement with substances: abstinence, use/experimentation, or abuse, will differ in their self-reported attitude toward their mother or primary female family figure. The anticipated ranking of the adolescents from most positive attitude to most negative attitude is:

Abstainers > User/experimenter > Abusers

Results of the one-way analysis of variance indicated that the three groups of students did not differ in their attitudes toward their mothers. Although the obtained scores for the user/experimenters indicated a higher level of conflict with their mothers than reported by the abstainers or abusers, these differences were not statistically significant.

These results do not support the literature that found a correlation between adolescent abstinence and the quality of adolescents' relationships with their parents (Kandel, 1990; McMaster & Wintre, 1996; Shedler & Block, 1990). Several factors may have been operative in this result. First, the instrument used in this study relied on adolescents' self-reports. While McMaster and Wintre (1996) found such a connection by assessing only the adolescent's perception, Ratti, Humphrey, and Lyons (1996) found that there was a significant disparity between adolescent girl's and mother's perceptions of their relationship. Assessing the adolescent's perceptions alone may not have given a true picture of the quality of the relationship. A parent/adolescent questionnaire may have yielded better information for this variable.

Second, in the original Shedler and Block (1990) study, parent/adolescent relationships were assessed by observing their interactions in shared task

activities over time in a longitudinal format. A longitudinal format was used in the Kandel (1990) study as well. Discrete characteristics that lend themselves to quantitative analysis may be effectively addressed at a single point in time, but family relationships may be better assessed through observation over time.

Third is Stice and Gonzales' (1998) finding that individual adolescent temperament characteristics mediate parental relationship influences. They found that "the relations between parenting and problem behaviors were stronger for adolescents who evidenced the temperamental risk factor of elevated behavioral undercontrol" (p. 24). It may be that parenting influences become less important for adolescents low in temperament risk, an idea worth pursuing in future research.

Hypothesis four examined this dynamic from a different perspective.

H₄: Adolescents, at four different levels of attitude toward their parents: high positive attitude toward father plus high positive attitude toward mother, high positive attitude toward father plus low positive attitude toward mother, low positive attitude toward father plus high positive attitude toward mother, and low positive attitude toward father plus low positive attitude toward mother, will differ in the degree of their involvement with substances.

Results indicated that the degree of substance use did not differ significantly among the students relative to their attitudes toward their mothers and fathers. Differences in perceived conflict with parents did not appear to have a significant influence on substance use level. These findings do not support the research that found that perceived adolescent/mother and adolescent/father relationships are associated differently with the level of adolescent substance involvement (Barnes, 1990; Brook, Brook, Gordon, Whiteman, and Cohen,

1990; Hoffmann and Johnson, 1998; Jones, 1968, 1971; Majumder, Moss, and Murrelle, 1998; Ratti, Humphrey, and Lyons, 1996; Shedler and Block, 1990; and Stice and Gonzales, 1998).

The original study from which this research was derived (Shedler & Block, 1990) found that there was no difference between mothers of abstainers and abusers, but that fathers of abstainers differed markedly from the fathers of users and abusers in that they were demanding, authoritarian, squelched spontaneity and creativity, and appeared not to enjoy being with their children. The researchers concluded that the abstainers internalized their father's attitudes, whereas users and abusers rejected them to differing degrees. The present study assumed this could be operationalized in a measure designed to assess adolescent's attitudes toward their parents. This may have been too simplistic. Several studies which have identified substance abuse pathology in families have found varying degrees of enmeshment and/or disengagement as a major correlate (Brook, Brook, Gordon, Whiteman, & Cohen, 1990; Jessor & Jessor, 1975, 1977; McMaster & Wintre, 1996; Ratti, Humphrey, & Lyons, 1996). An instrument that directly measures the enmeshment/disengagement continuum may have been more appropriately used to identify the parent/adolescent relationship factors pertinent to abstention.

Conclusions

The primary objective of this study was to demonstrate a relationship between abstention and a personality profile high in reward dependence and harm avoidance, and low in novelty seeking behaviors. This was partially

supported. A strong relationship between abstention and a personality low in novelty seeking behaviors was found. This result is highly consistent with past research that demonstrated a significant relationship between level of substance involvement and novelty seeking/sensation seeking behaviors (Andrucci, Archer, Pancoast, & Gordon, 1989; Arnett, 1996; Ball, Carroll, & Rounsaville, 1994; Cloninger, Sigvardsson, & Bohman, 1988; Earlywine, Finn, Peterson, & Pihl, 1992; Galizio, Rosenthal, & Stein, 1983; Newcomb, & McGee, 1991; Schwarz, Burkhart, & Green, 1978; Wills, Vaccaro, & McNamara, 1994). The finding that harm avoidance and reward dependence were not related may not be entirely inconsistent with Cloninger, Sigvardsson, and Bohman's (1988) original research. While they inferred a relationship between abstention and a personality profile low in novelty seeking, high in harm avoidance, and high in reward dependence, just the opposite of the profile that they found to be associated with early onset, or Type II alcoholism, they also inferred that abstention may be related to late onset, or Type I alcoholism. Since Type I is a later onset pathology, that is, after the age of 25 (Cloninger, Sigvardsson, & Bohman, 1988), perhaps these relationships are not yet manifest in adolescence. The novelty seeking construct may be the most predictive personality variation at this stage of development.

The secondary objective was to demonstrate a relationship between abstention and low levels of relationship problems with the father independent of the adolescent/maternal relationship. The study found that differences in perceived conflict with the parents are not a significant influence on substance

use level. The strong relationship between substance use level and grade point average and religiosity indicates that involvement in substances may be mediated by the student's personally held value system independent of the adolescent/parental relationship.

Limitations of Study

First, the sample used for this study was comprised of graduating seniors from a single high school in a middle class suburb. It therefore was not representative of students from other geographical areas or socioeconomic levels. This homogeneity may have influenced the results. In Shedler and Block's (1990) original study, the participants were "heterogeneous with respect to social class and parent education" (p. 613). Two-thirds were White, one fourth Black, and one twelfth Asian. The cohort from which Kandel (1990) drew her sample was likewise diverse having been selected from "a stratified sample of 18 high schools throughout New York State" (p. 186). The students in the sample for this study were from one high school class in a stable, middle class suburb. Many had been together since grade school. It is safe to assume that they shared common experiences and bonds. This homogeneity may have influenced the lack of diversity in their responses.

Second, this study was based on single measures for each variable. Additional measures may have revealed more information on personality variations specific to abstainers, and a questionnaire specific to enmeshment/separation patterns and shared/disparate values may have yielded discerning information on family variables. In addition, a parent questionnaire on

family relationships could have provided broader insight into family interactions.

Third, this study used quantitative, self-report measures administered at a single point in time. The studies which found a link between abstention and conflictual paternal/adolescent relationships employed observational techniques in a longitudinal format. It may be that the nature of parent/adolescent relationships is better ascertained through direct observation over time.

Suggestions for Further Research

Future studies might employ a combination of self-report and observational measures of parent/adolescent interactions to provide more accurate information about family influence on abstention behavior.

Future studies might also employ a broader base personality measure to yield a cogent personality profile related to abstention behavior.

This study successfully avoided problems potentially inherent in collecting data from a large group of adolescents (301) at one time in an auditorium environment by employing a large staff of trained research assistants (11), breaking the larger sample into smaller subgroups of approximately 30 each, and providing writing surfaces and implements to compensate for the lack desk surface. It is suggested that this kind of procedure be followed when collecting data under similar circumstances.

Implications of Findings

These results showed that abstention may not be related to specific adolescent/parent relationship dynamics as implied in the reviewed studies. These results also refute a relationship between abstention and a specific,

cogent personality profile. Instead, they point to abstention as characterized by a personality low in novelty seeking behavior and mediated by a set of conventional values including academic achievement and religiosity.

Incorporating the information on the mediating factors operative in abstention behavior revealed in this study may be an important addition to programs aimed at preventing drug abuse.

Primary prevention programs could include parents in a curriculum designed to teach the importance of providing stimulating, diverse activities to help novelty seekers channel their need for stimulation into more positive avenues, and to teach the importance of establishing a value system that will act to mediate later drug use. Teachers might provide a variety of alternative activities for novelty seekers, and vocational counselors might guide novelty seekers into jobs that provide variety and diversity to help displace their need for substance stimulation. Therapists could focus on helping the novelty seeker develop coping skills which satisfy their need for diversity, risk, and excitement.

Considering the serious impact of drug use on our culture and on the lives of adolescents specifically, research that focuses only on the drug abuse end of the continuum of substance involvement is restricting our knowledge about important variables influential in the development of abstention behavior. Further research on abstention would not only increase our knowledge about abstaining behavior but would broaden our understanding of substance involvement in general.

APPENDIX A

PERSONALITY AND FAMILY RELATIONSHIP CORRELATES OF DRUG ABSTENTION IN ADOLESCENTS

Jacqueline M. Haskin, M. A., M. Ed., Principal Investigator, (248) 449-5021

Dear Parent or Guardian:

I would like to ask your permission for your son or daughter to participate in a research study. The purpose of the study is to see how personality traits and family factors influence teenagers' use or non-use of drugs. The knowledge gained by this project will be helpful in furthering our understanding of factors leading to drug use or non-use during adolescence. The results will also be used as part of a doctoral dissertation at Wayne State University, College of Education, Department of Educational Psychology.

Your son or daughter will be asked to fill out four questionnaires that ask about their attitudes, opinions, interests, and personal feelings, their use or non-use of drugs, their relationship with their mother and father, and basic background information. They will fill out the questionnaires during a senior class assembly. The study will take forty-five minutes.

Participation in the study is completely voluntary. Any student can refuse to participate or stop at any time during the study without penalty. There will also be no penalty if you do not wish your son or daughter to participate. This study involves no potential risks. It may help to increase your son or daughter's awareness of his/her family dynamics, clarify the extent of his/her use or non-use of drugs, and identify basic personality characteristics. This project has been approved by the Principal and the Senior Class Advisor. All information will be confidential. Students' names will NOT be recorded on any of the questionnaires so there will be no way to connect your son or daughter to any specific answers.

Your cooperation in this study is appreciated. If you do not want your son or daughter to participate, please sign the attached slip and mail it via first class mail to the school. If you wish to see the questionnaires, a copy is available in the school office for your review. If you have any questions, you may contact me, Jacqueline Haskin, at (XXX) XXX-XXXX or Dr. Peter Lichtenberg, Chairman Behavioral Institutional Review Board, Wayne State University, at (XXX) XXX-XXXX.

Sincerely,

Jacqueline M. Haskin, M.A., Principal Investigator
Page 1 of 2

PERSONALITY AND FAMILY RELATIONSHIP CORRELATES OF DRUG
ABSTENTION IN ADOLESCENTS

My son, daughter _____, does not have
permission to participate in the study on personality and family relationship
correlates of drug use or non-use.

Parent/Guardian Signature

Date

APPENDIX B

Agreement to Participate Form

Study Title: Personality and Family Relationship Correlates of Drug Abstinence in Adolescents

Principal Investigator: Jacqueline M. Haskin, M. A., M.Ed.

I am being asked to help Mrs. Haskin in a research study. The goal of this study is to see how personality traits and family factors influence teenagers' use or non-use of drugs.

If I decide to participate, my part in the project will take about 45 minutes during the senior class assembly. During this time, I will fill out four questionnaires that ask about my attitudes, opinions, interests, and personal feelings, my use of drugs, my relationship with my mother and father, and basic information about me and my family. I understand that this study involves no potential risks and that it may help to increase my awareness of my family dynamics, clarify the extent of my use or non-use of drugs, and identify basic personality characteristics.

This study has been explained to me and I have been allowed to ask questions about it. I understand that I do not have to fill out the questionnaires if I don't want to, and that I may stop part way through and no one will treat me badly. I understand that I am not to write my name on any of the questionnaires and that all information will be held confidential. I also understand that if I have any questions, I may contact Jacqueline Haskin, the principal investigator, at (XXX) XXX-XXXX or Dr. Peter Lichtenberg, Chairman Behavioral Institutional Review Board, Wayne State University, at (XXX) XXX-XXXX. I have read this form, understand the project, and agree to participate.

I will receive a signed copy of this agreement form.

Student _____

Date _____

Principal Investigator _____

Date _____

APPENDIX C

Tridimensional Personality Questionnaire

REMEMBER, DO NOT WRITE YOUR NAME ON THIS QUESTIONNAIRE

In this booklet you will find statements people might use to describe their attitudes, opinions, interests, and other personal feelings.

Each statement can be answered TRUE or FALSE. Read the statement and decide which choice best describes you.

To answer you only need to circle either "T" or "F" after each question. Read each statement carefully, but don't spend too much time deciding on the answer.

Please answer every statement, even if you are not completely sure of the answer. Remember there are no right or wrong answers--just describe your own personal opinions and feelings.

1.	I usually am confident that everything will go well, even in situations that worry most people.	T	F
2.	I often try new things just for fun or thrills, even if most people think it is a waste of time.	T	F
3.	I like to discuss my experiences and feelings openly with friends instead of keeping them to myself.	T	F
4.	When nothing new is happening, I usually start looking for something that is thrilling or exciting.	T	F
5.	Usually I am more worried than most people that something might go wrong in the future.	T	F
6.	I don't mind discussing my personal problems with people whom I have known briefly or slightly.	T	F
7.	I would like to have warm and close friends with me most of the time.	T	F
8.	I nearly always stay relaxed and carefree, even when nearly everyone else is fearful.	T	F
9.	I usually demand very good practical reasons before I am willing to change my old ways of doing things.	T	F
10.	I often have to stop what I am doing because I start worrying about what might go wrong.	T	F

11.	I hate to change the way I do things, even if many people tell me there is a new and better way to do it.	T	F
12.	My friends find it hard to know my feelings because I seldom tell them about my private thoughts.	T	F
13.	I like it when people can do whatever they want without strict rules and regulations.	T	F
14.	I often stop what I am doing because I get worried, even when my friends tell me everything will go well.	T	F
15.	I wouldn't bother me to be alone all the time.	T	F
16.	I like to be very organized and set up rules for people whenever I can.	T	F
17.	I usually do things my own way rather than giving in to the wishes of other people.	T	F
18.	I usually feel tense and worried when I have to do something new and unfamiliar.	T	F
19.	I often feel tense and worried in unfamiliar situations, even when others feel there is little to worry about.	T	F
20.	Other people often think that I am too independent because I won't do what they want.	T	F
21.	Even when most people feel it is not important, I often insist on things being done in a strict and orderly way.	T	F
22.	I often do things based on how I feel at the moment without thinking about how they were done in the past.	T	F
23.	I often feel tense and worried in unfamiliar situations, even when others feel there is no danger at all.	T	F
24.	I often break rules and regulations when I think I can get away with it.	T	F
25.	I usually stay calm and secure in situations that most people would find physically dangerous.	T	F
26.	I don't care very much whether people like me or the way I do things.	T	F
27.	I feel it is more important to be sympathetic and understanding of other people than to be practical and tough minded.	T	F
28.	I lose my temper more quickly than most people.	T	F

29.	I am usually confident that I can easily do things that most people would consider dangerous (such as driving an automobile fast on a wet or icy road).	T	F
30.	I often react so strongly to unexpected news that I say or do things that I regret.	T	F
31.	People find it easy to come to me for help, sympathy, and warm understanding.	T	F
32.	I am much more reserved and controlled than most people.	T	F
33.	When I have to meet a group of strangers, I am more shy than most people.	T	F
34.	I am strongly moved by sentimental appeals (like when asked to help crippled children).	T	F
35.	I almost never get so excited that I lose control of myself.	T	F
36.	I have a reputation as someone who is very practical and does not act on emotion.	T	F
37.	I often avoid meeting strangers because I lack confidence with people I do not know.	T	F
38.	I usually stay away from social situations where I would have to meet strangers, even if I am assured that they will be friendly.	T	F
39.	I usually push myself harder than most people do because I want to do as well as I possibly can.	T	F
40.	I am slower than most people to get excited about new ideas and activities.	T	F
41.	I often push myself to the point of exhaustion or try to do more than I really can.	T	F
42.	I would probably stay relaxed and outgoing when meeting a group of strangers, even if I were told they are unfriendly.	T	F
43.	It is difficult for me to keep the same interests for a long time because my attention often shifts to something else.	T	F
44.	I think I would stay confident and relaxed when meeting strangers, even if I were told they are angry at me.	T	F

45.	I could probably accomplish more than I do, but I don't see the point in pushing myself harder than is necessary to get by.	T	F
46.	I like to think about things for a long time before I make a decision.	T	F
47.	Most of the time I would prefer to do something a little risky (like riding in a fast automobile over steep hills and sharp turns) rather than having to stay quiet and inactive for a few hours.	T	F
48.	I often follow my instincts, hunches, or intuition without thinking through all the details.	T	F
49.	I try to do as little work as possible, even when other people expect more of me.	T	F
50.	I often have to change my decisions because I had a wrong hunch or mistaken first impression.	T	F
51.	Most of the time I would prefer to do something risky (like hang-gliding or parachute jumping) rather than having to stay quiet and inactive for a few hours.	T	F
52.	I am satisfied with my accomplishments, and have little desire to do better.	T	F
53.	I see no point in continuing to work on something unless there is a good chance of success.	T	F
54.	I have less energy and get tired more quickly than most people.	T	F
55.	I usually think about all the facts in detail before I make a decision.	T	F
56.	I nearly always think about all the facts in detail before I make a decision, even when other people demand a quick decision.	T	F
57.	I often need naps or extra rest periods because I get tired so easily.	T	F
58.	I don't go out of my way to please other people.	T	F
59.	I am more energetic and tire less quickly than most people.	T	F

60.	I am usually able to get other people to believe me, even when I know that what I am saying is exaggerated or untrue.	T	F
61.	I find it upsetting when other people don't give me the support that I expect from them.	T	F
62.	I can usually do a good job of stretching the truth to tell a funnier story or to play a joke on someone.	T	F
63.	I usually can stay "on the go" all day without having to push myself.	T	F
64.	I am usually more upset than most people by the loss of a close friend.	T	F
65.	I have trouble telling a lie, even when it is meant to spare someone else's feelings.	T	F
66.	I am better at saving money than most people.	T	F
67.	Even after there are problems in a friendship, I nearly always try to keep it going anyway.	T	F
68.	I recover more slowly than most people from minor illnesses or stress.	T	F
69.	I need much extra rest, support, or reassurance to recover from minor illnesses or stress.	T	F
70.	I often spend money until I run out of cash or get into debt from using too much credit.	T	F
71.	I seldom get upset when I don't receive the recognition that I deserve.	T	F
72.	Because I so often spend too much money on impulse, it is hard for me to save money, even for special plans like a vacation.	T	F
73.	It is extremely difficult for me to adjust to changes in my usual way of doing things because I get so tense, tired, or worried.	T	F
74.	If I am feeling upset, I usually feel better around friends than when left alone.	T	F
75.	I usually feel much more confident and energetic than most people, even after minor illnesses or stress.	T	F
76.	Some people think I am too stingy or tight with my money.	T	F

77.	I often keep trying the same thing over and over again, even when I have not had much success in a long time.	T	F
78.	It is hard for me to enjoy spending money on myself, even when I have saved plenty of money.	T	F
79.	I seldom let myself get upset for frustrated. When things don't work out, I simply move on to other activities.	T	F
80.	I recover more quickly than most people from minor illnesses or stress.	T	F
81.	I hate to make decisions based only on my first impressions.	T	F
82.	I think I will have very good luck in the future.	T	F
83.	I am often moved deeply by a fine speech or poetry.	T	F
84.	If I am embarrassed or humiliated, I get over it very quickly.	T	F
85.	I like old "tried and true" ways of doing things much better than trying "new and improved" ways.	T	F
86.	I like to keep my problems to myself.	T	F
87.	I enjoy saving money more than spending it on entertainment or thrills.	T	F
88.	Even when I am with friends, I prefer not to "open up" very much.	T	F
89.	I feel very confident and sure of myself in almost all social situations.	T	F
90.	I usually like to stay cool and detached from other people.	T	F
91.	I never worry about terrible things that might happen in the future.	T	F
92.	I am more hard-working than most people.	T	F
93.	In conversations, I am much better as a listener than as a talker.	T	F
94.	I like to please other people as much as I can.	T	F
95.	Regardless of any temporary problem that I have to overcome, I always think it will turn out well.	T	F

96.	I like to stay at home better than to travel or explore new places.	T	F
97.	I am usually so determined that I continue to work long after other people have given up	T	F
98.	I usually have good luck in whatever I try to do.	T	F
99.	I like to pay close attention to details in everything I do.	T	F
100.	It is easy for me to organize my thoughts while talking to someone.	T	F

APPENDIX D

Personal Background and Substance Use Questionnaire

REMEMBER, DO NOT WRITE YOUR NAME ON THIS QUESTIONNAIRE

This section is concerned with your personal background. Please check the answer that applies to you for each question.

1. How old are you? _____ years _____ months
2. What is your sex? ___male ___female
3. What is your cumulative GPA? Please respond in 2 digits. ____.
4. Which of the following best describes your ethnic background?
 - (a) ___ Afro-American
 - (b) ___ Caucasian
 - (c) ___ Hispanic
 - (d) ___ Middle Eastern
 - (e) ___ Native American (American Indian)
 - (f) ___ Other Specify _____
5. What is your religion? (Check only one.)
 - (a) ___ Jewish
 - (b) ___ Moslem
 - (c) ___ Protestant
 - (d) ___ Roman Catholic
 - (e) ___ Other Specify _____
6. How often do you attend a religious activity or service? (Check only one.)
 - (a) ___ never
 - (b) ___ 1 to 6 times per year
 - (c) ___ 7 to 11 times per year
 - (d) ___ once a month
 - (e) ___ 2-3 times per month
 - (f) ___ once a week
 - (g) ___ 2-6 times per week
 - (h) ___ 7 days per week

7. How important is religion in your life?
- (a) ___ not important
 - (b) ___ somewhat important
 - (c) ___ quite important
 - (d) ___ extremely important
8. How often do you listen to or watch religious programs on the radio or TV?
- (a) ___ never
 - (b) ___ 1 to 6 times per year
 - (c) ___ 7 to 11 times per year
 - (d) ___ once a month
 - (e) ___ 2-3 times per month
 - (f) ___ once a week
 - (g) ___ 2-6 times per week
 - (h) ___ 7 days per week
8. What is your Father's or primary male figure in your family's occupation? (Check only one.)
- (a) ___ professional (doctor, lawyer, teacher, nurse)
 - (b) ___ business manager or executive
 - (c) ___ business owner
 - (d) ___ secretary, office worker, sales person
 - (e) ___ foreman or sales manager
 - (f) ___ craftsman (tool & die maker, carpenter, etc.)
 - (g) ___ service worker (repairman, plumber, electrician, etc.)
 - (h) ___ laborer (factory worker)
 - (i) ___ homemaker
 - (j) ___ student
 - (k) ___ other (retired, disabled, not working, or occupation not mentioned)
specify _____

9. What is your Mother's or primary female figure in your family's occupation? (Check only one.)

- (a) ___ professional (doctor, lawyer, teacher, nurse)
- (b) ___ business manager or executive
- (c) ___ business owner
- (d) ___ secretary, office worker, sales person
- (e) ___ foreman or sales manager
- (f) ___ craftsman (tool & die maker, carpenter, etc.)
- (g) ___ service worker (repairman, plumber, electrician, etc.)
- (h) ___ laborer (factory worker)
- (i) ___ homemaker
- (j) ___ student
- (k) ___ other (retired, disabled, not working, or occupation not mentioned)
specify _____

10. What level of education has your Father or primary male figure in your family completed?

- (a) ___ graduate school
- (b) ___ college
- (c) ___ some college
- (d) ___ technical school/associate degree
- (e) ___ high school
- (f) ___ some high school
- (g) ___ middle school or less

11. What level of education has your Mother or primary female figure in your family completed:

- (a) ___ graduate school
- (b) ___ college
- (c) ___ some college
- (d) ___ technical school/associate degree
- (e) ___ high school
- (f) ___ some high school
- (g) ___ middle school or less

This section is concerned with your experiences with alcohol, marijuana, and other drugs. It is not a test, so there are no right or wrong answers. Please check the most appropriate answer to each question. If you don't find an answer that fits exactly, check the one that comes the closest.

12. On how many occasions have you had alcohol to drink? (beer, wine, wine coolers, or liquor)
- | | |
|---------------------|-------------------------|
| (0) __never | (4) __2-3 times a month |
| (1) __once or twice | (5) __1-3 days a week |
| (2) __a few times | (6) __4-6 days a week |
| (3) __once a month | (7) __7 days a week |
13. How often have you used marijuana? (grass, pot)
- | | |
|---------------------|-------------------------|
| (0) __never | (4) __2-3 times a month |
| (1) __once or twice | (5) __1-3 days a week |
| (2) __a few times | (6) __4-6 days a week |
| (3) __once a month | (7) __7 days a week |
14. How often have you used inhalants? (glue, aerosols, laughing gas, etc.)
- | | |
|---------------------|-------------------------|
| (0) __never | (4) __2-3 times a month |
| (1) __once or twice | (5) __1-3 days a week |
| (2) __a few times | (6) __4-6 days a week |
| (3) __once a month | (7) __7 days a week |
15. How often have you used cocaine? (coke, crack, rock, etc.)
- | | |
|---------------------|-------------------------|
| (0) __never | (4) __2-3 times a month |
| (1) __once or twice | (5) __1-3 days a week |
| (2) __a few times | (6) __4-6 days a week |
| (3) __once a month | (7) __7 days a week |
16. How often have you used hallucinogens? (LSD, mescaline, peyote, PCP, etc.)
- | | |
|---------------------|-------------------------|
| (0) __never | (4) __2-3 times a month |
| (1) __once or twice | (5) __1-3 days a week |
| (2) __a few times | (6) __4-6 days a week |
| (3) __once a month | (7) __7 days a week |

17. How often have you used barbiturates? (downs, downers, goofballs, yellows, reds, blues, rainbows, seconal, or other sedatives, etc.)

- | | |
|---------------------|-------------------------|
| (0) __never | (4) __2-3 times a month |
| (1) __once or twice | (5) __1-3 days a week |
| (2) __a few times | (6) __4-6 days a week |
| (3) __once a month | (7) __7 days a week |

18. How often have you used amphetamines? (ups, uppers, bennies, dexies, pep pills, diet pills, speed, or other stimulants, etc.)

- | | |
|---------------------|-------------------------|
| (0) __never | (4) __2-3 times a month |
| (1) __once or twice | (5) __1-3 days a week |
| (2) __a few times | (6) __4-6 days a week |
| (3) __once a month | (7) __7 days a week |

19. How often have you used tranquilizers? (valium, librium, miltown, equanil, etc.)

- | | |
|---------------------|-------------------------|
| (0) __never | (4) __2-3 times a month |
| (1) __once or twice | (5) __1-3 days a week |
| (2) __a few times | (6) __4-6 days a week |
| (3) __once a month | (7) __7 days a week |

20. How often have you used heroin?

- | | |
|---------------------|-------------------------|
| (0) __never | (4) __2-3 times a month |
| (1) __once or twice | (5) __1-3 days a week |
| (2) __a few times | (6) __4-6 days a week |
| (3) __once a month | (7) __7 days a week |

21. How often have you used other drugs not specifically listed?

- | | |
|---------------------|-------------------------|
| (0) __never | (4) __2-3 times a month |
| (1) __once or twice | (5) __1-3 days a week |
| (2) __a few times | (6) __4-6 days a week |
| (3) __once a month | (7) __7 days a week |

22. With whom do you currently live?

(a) __mother and father

(d) __mother and stepfather

(b) __mother only

(e) __father and stepmother

(c) __father only

(f) __other, specify_____

23. With whom did you live most of the time during high school?

(a) __mother and father

(d) __mother and stepfather

(b) __mother only

(e) __father and stepmother

(c) __father only

(f) __other, specify_____

24. Do you consider anyone in your family to be an alcoholic or substance abuser?

(a) __yes, specify relationship_____

(b) __no

APPENDIX E

Attitude Toward Mother Scale

REMEMBER, DO NOT WRITE YOUR NAME ON THIS QUESTIONNAIRE

This questionnaire is designed to measure the degree of contentment you have in your relationship with your mother. It is not a test, so there are no right or wrong answers. To complete this section, think of a scale ranging from 1 to 7 that tells how often a statement applies to you. For example, a check in the number 1 box would indicate that the statement applies to you none of the time, a check in the number 4 box would indicate that the statement applies to you some of the time, and a check in the number 7 box would indicate that the statement applies to you all of the time.

None of the time	Very rarely	A little of the time	Some of the time	A good part of the time	Most of the time	All of the time
1	2	3	4	5	6	7

Answer each item as carefully and accurately as you can by checking the number that best describes how often the statement applies to you.

STATEMENTS	1	2	3	4	5	6	7
1. My mother gets on my nerves.							
2. I get along well with my mother.							
3. I feel that I can really trust my mother.							
4. I dislike my mother.							
5. My mother's behavior embarrasses me.							
6. My mother is too demanding.							
7. I wish I had a different mother.							
8. I really enjoy my mother.							
9. My mother puts too many limits on me.							
10. My mother interferes with my activities.							
11. I resent my mother.							

Attitude Toward Mother Scale

None of the time	Very rarely	A little of the time	Some of the time	A good part of the time	Most of the time	All of the time
1	2	3	4	5	6	7

STATEMENTS	1	2	3	4	5	6	7
12. I think my mother is terrific.							
13. I hate my mother.							
14. My mother is very patient with me.							
15. I really like my mother.							
16. I like being with my mother.							
17. I feel like I do not love my mother.							
18. My mother is very irritating.							
19. I feel very angry toward my mother.							
20. I feel violent toward my mother.							
21. I feel proud of my mother.							
22. I wish my mother was more like others I know.							
23. My mother does not understand me.							
24. I can really depend on my mother.							
25. I feel ashamed of my mother.							

Attitude Toward Father Scale

REMEMBER, DO NOT WRITE YOUR NAME ON THIS QUESTIONNAIRE

This questionnaire is designed to measure the degree of contentment you have in your relationship with your father. It is not a test, so there are no right or wrong answers. To complete this section, think of a scale ranging from 1 to 7 that tells how often a statement applies to you. For example, a check in the number 1 box would indicate that the statement applies to you none of the time, a check in the number 4 box would indicate that the statement applies to you some of the time, and a check in the number 7 box would indicate that the statement applies to you all of the time.

None of the time	Very rarely	A little of the time	Some of the time	A good part of the time	Most of the time	All of the time
1	2	3	4	5	6	7

Answer each item as carefully and accurately as you can by checking the number that best describes how often the statement applies to you.

STATEMENTS	1	2	3	4	5	6	7
1. My father gets on my nerves.							
2. I get along well with my father.							
3. I feel that I can really trust my father.							
4. I dislike my father.							
5. My father's behavior embarrass me.							
6. My father is too demanding.							
7. I wish I had a different father.							
8. I really enjoy my father.							
9. My father puts too many limits on me.							
10. My father interferes with my activities.							
11. I resent my father.							
12. I think my father is terrific.							
13. I hate my father.							

Attitude Toward Father Scale

None of the time	Very rarely	A little of the time	Some of the time	A good part of the time	Most of the time	All of the time
1	2	3	4	5	6	7

STATEMENTS	1	2	3	4	5	6	7
14. My father is very patient with me.							
15. I really like my father.							
16. I like being with my father.							
17. I feel like I do not love my father.							
18. My father is very irritating.							
19. I feel very angry toward my father.							
20. I feel violent toward my father.							
21. I feel proud of my father.							
22. I wish my father was more like others I know.							
23. My father does not understand me.							
24. I can really depend on my father.							
25. I feel ashamed of my father.							

REFERENCES

Akers, R. L. (1977). Deviant behavior: A social learning approach (2nd ed.). Belmont: Wadsworth Press.

Akers, R. L., Krohn, M. D., Lanza-Kaduce, L., Radosevich, M. (1979). Social learning and deviant behavior: A specific test of a general theory. American Sociological Review, 44, 635-655.

Allport, G. W. (1937). Personality: A psychological interpretation. New York, NY: Holt Rinehart & Winston.

Allport, G. W. (1955). Becoming: Basic considerations for a psychology of personality. New Haven: Yale University Press.

Allport, G. W. (1961). Pattern and growth in personality. New York: Holt, Rinehart and Winston.

Allport, G. W. (1966). Traits revisited. American Psychologist, 21, 1-10.

Allport, G. W., & Odbert, H. S. (1936). Trait-names: A psycho-textical study. Psychological Monographs, 47, (Whole No. 211).

Almeida, D. M., & Galambos, N. L. (1991). Examining father involvement and the quality of father-adolescent relations. Journal of Research on Adolescence, 1, 155-172.

American Institute of Public Opinion. (1966). 1966 drinking audit. Princeton, NJ: Author.

Anderman, C., Cheadle, A., Curry, S., Diehr, P., Shultz, L., & Wagner, E. (1995). Selection bias related to parental consent in school-based survey research. Evaluation Review, 19(6), 663-674.

Andrucci, G. L., Archer, R. P., Pancoast, D. L., & Gordon, R. A. (1989). The relationship of MMPI and sensation seeking scales to adolescent drug use. Journal of Personality Assessment, 53, 253-266.

Arnett, J. J. (1996). Sensation seeking, aggressiveness, and adolescent reckless behavior. Personality and Individual Differences, 20(6), 693-702.

Bachman, J. G., Johnston, L. D., & O'Malley, P. M. (1991). The monitoring the future project after seventeen years: Design and procedures (Occasional Paper No. 33). Ann Arbor, MI: Institute for Social Research.

Bachman, J. G., O'Malley, P.M., & Johnston, L. D. (1981). Smoking, drinking and drug use among American high school students: Correlates and trends, 1975-1979. American Journal of Public Health, 71, 59-69.

Bagby, R. M., Parker, J. D. A., & Joffe, R. T. (1992). Confirmatory factor analysis of the Tridimensional Personality Questionnaire. Personality and Individual Differences, 13(11), 1245-1246.

Bailey, K., & Ellerman, K. (1994). Communication needs of adolescent offenders. Youth Studies, 13, 40-44.

Ball, S.A., Carroll, K. M., & Rounsaville, B. J. (1994). Sensation seeking, substance abuse, and psychopathology in treatment-seeking and community cocaine abusers. Journal of Consulting and Clinical Psychology, 62(5), 1053-1057.

Barber, B. K., & Buehler, C. (1996). Family cohesion and enmeshment: Different constructs, different effects. Journal of Marriage and the Family 58, 433-441.

Barber, B. K., Olsen, J. E., & Shale, S. C. (1994). Association between parental psychological and behavioral control and youth internalized and externalized behaviors. Child Development, 65, 1120-1136.

Barnes, G. M. (1990). Impact of the family on adolescent drinking patterns. In R. L. Collins, K. E. Leonard, & J. S. Searles (Eds.), Alcohol and the family: Research and clinical perspective (pp. 137-161). New York: Guilford.

Bateson, G., Jackson, D. D., Haley, J., & Weakland, J. (1956). Towards a theory of schizophrenia. Behavioral Science, 1, 251-264.

Baumrind, D. (1985). Familial antecedents of adolescent drug use: A developmental perspective. In C. L. Jones & R. Battjes (Eds.), Etiology of Drug Abuse: Implications for Prevention (Research Monograph No. 56, pp. 12-44). Rockville, MD: National Institute on Drug Abuse.

Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance use. Journal of Early Adolescence, 11, 56-95.

Bell, R. M., Gareleck, C., & Ellickson, P.L. (1990). Baseline nonresponse in Project ALERT: Does it matter? (N-2933-CHF) Santa Monica: The RAND Corporation.

Block, J., & Block, J. H. (1980). The California Child Q-Set. Palo Alto, CA: Consulting Psychologists Press.

Boszormenyi-Nagi, I., & Spark, G. M. (1973). Invisible loyalties: Reciprocity in intergenerational family therapy. New York: Harper & Row.

Bowen, M. (1960). A family concept of schizophrenia. In D. D. Jackson (Ed.), The etiology of schizophrenia. New York: Basic Books.

Bowerman, C. E., & Kinch, J. W. (1959). Changes in family and peer orientation of children between the 4th and 10th grades. Social Forces, 37, 206-211.

Bronfenbrenner, U. (1972). Influences on Human development. Hinsdale: Dryden Press.

Brook, J. S., Brook, D. W., Gordon, A. S., Whiteman, M., & Cohen, P. (1990). The psychological etiology of adolescent drug use: A family interactional approach. Genetic, Social, and General Psychology Monographs, 116, 111-267.

Brook, J. S., Gordon, A. S., & Brook, D. W. (1980). Perceived paternal relationships, adolescent personality, and female marijuana use. Journal of Psychology, 105, 277-285.

Brook, J. S., Gordon, A. S., Whiteman, M., & Cohen, P. (1986). Some models and mechanisms for explaining the impact of maternal and adolescent characteristics on adolescent stage of drug use. Developmental Psychology, 22, 460-467.

Brook, J. S., Whiteman, M., Brook, D. W., & Gordon, A. S. (1981). Paternal determinants of male adolescent marijuana use. Developmental Psychology, 17(6), 841-847.

Cahalan, D., Cisin, I. H., & Crossley, H. M. (1970). American drinking practices; A national study of drinking behavior and attitudes (Monograph No. 6). New Brunswick, NJ: Rutgers Center of Alcohol Studies.

Cahalan, D., Cisin, I. H., Kirsch, A. D., & Newcomb, C. (1965). Behavior and attitudes related to drinking in a medium-sized urban community in New England. (Social Research Group, Rep. No. 2). Washington, DC: George Washington University.

Cappell, H. (1975). An evaluation of tension models of alcohol consumption. In R. J. Gibbons, Y. Israel, H. Kalant, R. E. Popham, W. Schmidt, & R. G. Smart (Eds.), Research advances in alcohol and drug problems (Vol. 2, pp. 177-210). New York: John Wiley & Sons.

Cappell, H. & Herman, C. P. (1972). Alcohol and tension reduction: A review. Quarterly Journal of Studies on Alcohol, 33, 33-64.

Christiansen, B. A., Goldman, M. S., & Inn, A. (1982). Development of alcohol related expectancies in adolescents: Separating pharmacological from social-learning influences. Journal of Consulting and Clinical Psychology, 50(3), 336-344.

Christiansen, B. A., Smith, G. T., Roehling, P. V., & Goldman, M. S. (1989). Using alcohol expectancies to predict adolescent drinking behavior after one year. Journal of Consulting and Clinical Psychology, 57(1), 93-99.

Clayton, R. R. (1992). Transitions in drug use: Risk and protective factors. In M. Glantz & R. Pickens (Eds.), Vulnerability to drug abuse (pp. 15-51). Washington, DC: American Psychological Association.

Cloninger, C. R. (1986). A unified biosocial theory of personality and its role in the development of anxiety states. Psychiatric Developments, 3, 167-224.

Cloninger, C. R. (1987a). A systematic method for clinical description and classification of personality variants. Archives of General Psychiatry, 44, 573-588.

Cloninger, C. R. (1987b). The Tridimensional Personality Questionnaire, Version iv. St. Louis, MO: Department of Psychiatry, Washington University School of Medicine.

Cloninger, C. R., Przybeck, T. R., & Svrakic, D. M. (1991). The Tridimensional Personality Questionnaire: U.S. normative data. Psychological Reports, 69, 1047-1057.

Cloninger, C. R., Sigvardsson, S., & Bohman, M. (1988). Childhood personality predicts alcohol abuse in young adults. Alcoholism: Clinical and Experimental Research, 12(4), 494-505.

Cloninger, C. R., Sigvardsson, S., Przybeck, T. R., & Svrakic, D. M. (1995). Personality antecedents of alcoholism in a national area probability sample. European Archives of Psychiatry and Clinical Neuroscience, 245, 239-244.

Cloninger, C. R., Svrakic, D. M., & Przybeck, T. R. (1993). A psychobiological model of temperament and character. Archives of General Psychiatry, 50, 975-990.

Cloward, R. A., & Ohlin, L. E. (1960). Delinquency and Opportunity: A Theory of Delinquent Gangs. Glencoe, Ill: Free Press.

Cohen, A. (1955). Delinquent Boys. Glencoe Ill: Free Press.

Coleman, J. (1961). Adolescent Society. Glencoe, Ill: Free Press.

Collins, R. L., & Marlatt, G. A. (1981). Social modeling as a determinant of drinking behavior: Implications for prevention and treatment. Addictive Behaviors, 6, 233-239.

Costa, P. R. Jr. & McCrae, R. R. (1992). Four ways five factors are basic. Personality and Individual Differences, 13(6), 653-665.

Cox, W. M. (1987). Personality theory and research. In H. T. Blane & K. E. Leonard (Eds.), Psychological theories of drinking and alcoholism (pp. 55-89). New York: Guilford Press.

Dadds, M. R., Sanders, M. R., Morrison, M., & Rebgetz, M. (1992). Childhood depression and conduct disorder: An analysis of family interaction patterns in the home. Journal of Abnormal Psychology, 101, 505-513.

Dent, C. W., Galaif, J., Sussman, S., Stacy, A., Burtun, D., & Flay, B. R. (1993). Demographic, psychosocial and behavioral differences in samples of actively and passively consented adolescents. Addictive Behaviors, 18, 51-56.

Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. Annual Review of Psychology, 41, 417-440.

Donovan, J. E., & Jessor, R. (1985). Structure of problem behavior in adolescence and young adulthood. Journal of Consulting and Clinical Psychology, 53, 890-904.

Donovon, J. E., Jessor, R., & Costa, F. M. (1988). Syndrome of problem behavior in adolescence: A replication. Journal of Consulting and Clinical Psychology, 56, 762-765.

Donovan, J. D., Jessor, R., & Costa, F. M. (1991). Adolescent health behavior and conventionality-unconventionality: An extension of problem-behavior theory. Health Psychology, 10(1), 52-61.

Dryfoos, J. G. (1990). Adolescents at risk: Prevalence and prevention. New York: Oxford University Press.

Earlywine, M., Finn, P. R., Peterson, J. B., Pihl, T. O. (1992). Factor structure and correlates of the Tridimensional Personality Questionnaire. Journal of Studies on Alcohol, 53(3), 233-238.

Eccles, J. S., Midgley, C., Wigfield, A., Buchanan, C. M., Reuman, D., Flanagan, C., & Mac Iver, D. (1993). Development during adolescence: The impact of stage-environment fit on young adolescents' experiences in schools

and in families. American Psychologist, 48(2), 90-101.

Elinson, J., Padilla, E., & Perkins, M. (1967). Public Images of Mental Health Services. New York: Mental Health Materials Center.

Ellickson, P. L., & Hawes, J. A. (1989). An assessment of active versus passive methods for obtaining parental consent. Evaluation Review, 13(1), 45-55.

Eysenck, H. J. (1991). Dimensions of personality: 16, 5, or 3?--Criteria for taxonomic paradigm. Personality and Individual Differences, 12(8), 773-790.

Farrell, M. P., & Barnes, G. M. (1993). Family systems and social support: A test of the effects of cohesion and adaptability on the functioning of parents and adolescents. Journal of Marriage and the Family, 55, 119-132.

Farrell, A. D., Danish, S. J., & Howard, C. W. (1992). Risk factors for drug use in urban adolescents: Identification and cross-validation. American Journal of Community Psychology, 20, 263-286.

Farrow, J. A. (1987). The use of vignette analysis of dangerous driving situations involving alcohol to differentiate adolescent DWI offenders and high school drivers. American Journal of Drug and Alcohol Abuse, 13 (1&2), 157-174.

Fauber, R., Forehand, R., Thomas, A. M., & Wierson, M. (1990). A mediational model of the impact of marital conflict on adolescent adjustment in intact and divorced families: The role of disrupted parenting. Child Development, 61, 1112-1123.

Floyd, H. H., & South, D. R. (1972). Dilemma of youth: The choice of parents or peers as a frame of reference for behavior. Journal of Marriage and Family, 34(4), 627-634.

Forehand, R., & Nousiainen, S. (1993). Maternal and paternal parenting: Critical dimensions in adolescent functioning. Journal of Family Psychology, 7, 213-221.

Foxcroft, D. R., & Lowe, G. (1991). Adolescent drinking behaviour and family socialization factors: A meta-analysis. Journal of Adolescence, 14, 255-273.

Foxcroft, D. R., & Lowe, G. (1995). Adolescent drinking, smoking and other substance use involvement: Links with perceived family life. Journal of Adolescence, 18, 159-177.

Fromm-Reichmann, F. (1948). Notes on the development of treatment of

schizophrenics by psychoanalytic psychotherapy. Psychiatry, 11, 263-273.

Galizio, M., Rosenthal, D., & Stein, F. A. (1983). Sensation seeking, reinforcement, and student drug use. Addictive Behaviors, 8, 243-252.

Ge, X., Lorenz, F. O., Conger, R. D., Elder, G. H., & Simons, R. L. (1994). Trajectories of stressful life events and depressive symptoms during adolescence. Developmental Psychology, 30, 467-483.

Giuli, C. A., & Hudson, W. A. (1977). Assessing parent-child relationship disorders in clinical practice: The child's point of view. Journal of Social Service Research, 1(1).

Goldenberg, I., & Goldenberg, H. (1983). Historical roots of contemporary family therapy. In B. B. Wolman & G. Stricker (Eds.), Handbook of family and marital therapy. New York: Plenum.

Goldenberg, I., & Goldenberg, H. (1985). Family therapy: An overview. Pacific Grove, California: Brooks/Cole Publishing Company.

Goldman, M. S., Brown, S. A., & Christiansen, B. A. (1987). Expectancy theory: Thinking about drinking. In H. T. Blane & K. E. Leonard (Eds.), Psychological theories of drinking and alcoholism (pp. 181-226). New York: Guilford Press.

Goldstein, J. W., & Sappington, J. T. (1977). Personality characteristics of students who became heavy drug users: An MMPI study of an *Avant-Garde*. American Journal of Drug and Alcohol Abuse, 4(3), 401-412.

Hansen, W. B., Graham, J. W., Sobel, J. L., Shelton, D. R., Flay, B. R., & Johnson, C. A. (1987). The consistency of peer and parent influences on tobacco, alcohol, and marijuana use among young adolescents. Journal of Behavioral Medicine, 10, 559-579.

Hart, L. R. (1995). MAPI personality correlates of comorbid substance abuse among adolescent psychiatric inpatients. Journal of Adolescence, 18, 657-667.

Hauser, S. T. (1991). Adolescents and their families: Paths of ego development. New York: Free Press.

Hawkins, J. D., Catalano, R. F., & Miller, J. Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. Psychological Bulletin, 112(1), 64-105.

Heath, A. C., Cloninger, C. R., & Martin, N. G. (1994). Testing a model for the genetic structure of personality: A comparison of the personality systems of Cloninger and Eysenck. Journal of Personality and Social Psychology, 66, 762-775.

Hillman, S. B., & Sawilowsky, S. S. (1992). A comparison of two grouping methods in distinguishing levels of substance use. Journal of Clinical Child Psychology, 21(4), 348-353.

Hirsch, S., & Leff, J. (1975). Abnormalities in parents of schizophrenics. Oxford: Oxford University Press.

Hirschi, T. (1969). Causes of delinquency. Berkeley: University of California Press.

Hoffman, J. P., & Johnson, R. A. (1998). A national portrait of family structure and adolescent drug use. Journal of Marriage and the Family, 60, 633-645.

Hollingshead, A. B. (1975). Four factor index of social status. Unpublished working paper, Department of Sociology, Yale University, New Haven: CT.

Holmbeck, G. N., and Wandrei, M. L. (1993). Individual and relational predictors of adjustment in first-year college students. Journal of Counseling Psychology, 40(1), 73-78.

Huba, G. J., & Bentler, P. M. (1982). A developmental theory of drug use: Deviation and assessment of a causal modeling approach. In P. B. Baltes, & O. G. Brin (Eds.), Life Span Development and Behavior, (Vol. 4, 147-208). New York: Academic Press.

Huba, G. J., & Bentler, P. M. (1984). Causal models of personality, peer culture characteristics, drug use, and criminal behaviors over a five-year span. In D. W. Goodwin, K. T. Van Dusen, & S. A. Mednick (Eds.), Longitudinal Research in Alcoholism, 73-94. Boston: Kluwer-Nijhoff.

Irwin, C. E. (1989). Risk taking behaviors in the adolescent patient: Are they impulsive? Pediatric Annals, 18(2), 122-133.

Irwin, C. E., Jr., & Millstein, S. G. (1986). Biopsychosocial correlates of risk-taking behaviors during adolescence. Journal of Adolescent Health Care, 7, 825-965.

Jessor, R. (1982). Problem behavior and developmental transition in adolescence. The Journal of School Health, May, 295-300.

Jessor, R. (1987). Risky driving and adolescent problem behavior: An extension of problem-behavior theory. Alcohol, Drug, and Driving, 3(3-4), 1-11.

Jessor, R. (1991). Risk behavior in adolescence: A psychosocial framework for understanding and action. Journal of Adolescent Health, 12, 597-605.

Jessor, R. (1993). Successful adolescent development among youth in high-risk settings. American Psychologist, 48(2), 117-126.

Jessor, R., Chase, J. A., & Donovan, J. E. (1980). Psychosocial correlates of marijuana use and problem drinking in a national sample of adolescents. American Journal of Public Health, 70(6), 604-613.

Jessor, R., Donovan, J. E., & Costa, F. M. (1991). Beyond adolescence: Problem behavior and young adult development. Cambridge, England: Cambridge University Press.

Jessor, R., Graves, T. D., Hanson, R. C., & Jessor, S. L. (1968). Society, personality, and deviant behavior: Study of a tri-ethnic community. NY: Holt, Rinehart, & Winston.

Jessor, R., & Jessor, S. L. (1975). Adolescent development and the onset of drinking: A longitudinal study. Journal of Studies on Alcohol, 36(1).

Jessor, R., & Jessor, S. L. (1977). Problem behavior and psychosocial development: A longitudinal study of youth. NY: Academic.

Jessor, R., Jessor, S. L., Finney, J. (1973). A social psychology of marijuana use: Longitudinal studies of high school and college youth. Journal of Personality and Social Psychology, 26, 1-15.

Jessor, R., Turbin, M. S., & Costa, F. M. (1998). Protective factors in adolescent health behavior. Journal of Personality and Social Psychology, 75(3), 788-800.

Johnson, G. M., Schoutz, F. C., & Locke, T. P. (1984). Relationships between adolescent drug use and parental drug behaviors. Adolescence, 19, 295-299.

Johnston, L. D., O'Malley, P. ., & Bachman, J. G. (1993). National survey results on drug use from the Monitoring the Future Study, 1975-1992, Vol. 1: Secondary school students. (National Institute on Drug Abuse, NIH Pub. No. 93-3597). Washington, DC: U.S. Government Printing Office.

Johnston, L. D., O'Malley, P. M., & Bachman, J. G. (1995). National

survey results on drug use from the Monitoring the Future Study, 1975-1994. Vol. I: Secondary school students (National Institute on Drug Abuse, NIH Pub. 95-4026). Washington, DC: U.S. Government Printing Office.

Jones, M. C. (1968). Personality correlates and antecedents of drinking patterns in adult males. Journal of Consulting and Clinical Psychology, 31, 1-12.

Jones, M. C. (1971). Personality correlates and antecedents of drinking patterns in women. Journal of Consulting and Clinical Psychology, 36, 61-69.

Jones, S. P., & Heaven, P. C. L. (1998). Psychosocial correlates of adolescent drug-taking behavior. Journal of Adolescence, 21, 127-134.

Josephson, E. & Rosen, M. A. (1978). Panel loss in a high school study. In D. B. Kandel (Ed.) Longitudinal Research on Drug Use: Empirical Findings and Methodological Issues. Washington, DC: Hemisphere Publishing Corporation.

Kandel, D. B. (1980). Drug and drinking behavior among youth. Annual Reviews of Sociology, 6, 235-285.

Kandel, D. B. (1982). Epidemiological and psychosocial perspectives on adolescent drug use. Journal of American Academic Clinical Psychiatry, 21, 328-347.

Kandel, D. B. (1990). Parenting styles, drug use, and children's adjustment in families of young adults. Journal of Marriage and the Family, 52, 183-196.

Kandel, D. B., & Andrews, K. (1987). Processes of adolescent socialization by parents and peers. International Journal of Addictions, 22, 319-342.

Kandel, D. B., Kessler, R. C., & Margulies, R. S. (1978). Antecedents of adolescent initiation into stages of drug use: A developmental analysis. Journal of Youth and Adolescence, 7(1), 13-40.

Kandel, D. B., & Logan, J. A. (1984). Patterns of drug use from adolescence to young adulthood: Periods of risk for initiation, continued use, and discontinuation. American Journal of Public Health, 74, 660-666.

Kazdin, A. E. (1993). Adolescent mental health: Prevention and treatment programs. American Psychologist, 48(2), 127-141.

Kearney, K. A., Hopkins, R. H., Mauss, A. L., & Weisheit, R. A. (1983). Sample bias resulting from a requirement for written parental consent. Public

Opinion Quarterly, 47, 96-102.

Knupfer, G. (1961). Characteristics of abstainers: A comparison of drinkers and non-drinkers in a large California city. (California Drinking Practices study, Rep. No. 3) Berkeley, California State Department of Public Health.

Knupfer, G., & Room, R. (1964). Age, sex and social class as factors in amount of drinking in a metropolitan community. Social Problems, 12, 224-240.

Knupfer, G., & Room, R. (1970). Abstainers in a metropolitan community. Quarterly Journal of Studies on Alcohol, 31, 108-131.

Lewis, J. M., Beavers, W. R., Gossett, J. T., & Phillips, V. A. (1976). No single thread: Psychological health in family systems. New York: Brunner/Mazel.

Lewis, C. E., & Lewis, M. A. (1984). Peer pressure and risk-taking behaviors in children. American Journal of Public Health, 74(6), 580-584.

Lidz, R., & Lidz, T. (1949). The family environment of schizophrenic patients. American Journal of Psychiatry, 106, 332-345.

Lindesmith, A. (1968). Addiction and opiates. Chicago: Aldine.

Loper, R. G., Kammeier, M. L., & Hoffman, H. (1973). MMPI characteristics of college freshman males who later became alcoholics. Journal of Abnormal Psychology, 82(1), 159-162.

Lopez, F. G. (1991). Patterns of family conflict and their relation to college student adjustment. Journal of Counseling and Adjustment, 69(3), 257-260.

Lueptow, L., Mueller, S. A., Hammes, R. R., & Master, L. S. (1977). The impact of informed consent regulations on response rate and response bias. Sociological Methods and Research, 6(2), 183-204.

MacKay, J. R. (1961). Clinical observations on adolescent problem drinkers. Quarterly Journal of Studies on Alcohol, 22, 124-134.

Majumder, P. P., Moss, H. B., & Murrelle, L. (1998). Familial and nonfamilial factors in the prediction of disruptive behaviors in boys at risk for substance abuse. Journal of Child Psychology and Psychiatry, 39(2), 203-213.

Mathijssen, J. J. J. P., Koot, H. M., Verhulst, F. C., De Bruyn, E. E. J., and Oud, J. H. L. (1998). The relationship between mutual family relations and child psychopathology. Journal of Child Psychology and Psychiatry, 39(4), 477-487.

Maxwell, M. A. (1952). Drinking behavior in the state of Washington.

Quarterly Journal of Studies on Alcohol, 13, 219-239.

Mayer, J. E. (1988). The personality characteristics of adolescents who use and misuse alcohol. Adolescence, XXIII(90), 383-404.

McCrae, R. R., & Costa, P. T. Jr. (1997). Personality trait structure as a human universal. American Psychologist, 52(5), 509-516.

McDermott, D. (1984). The relationship of parental drug use and parents' attitude concerning adolescent drug use to adolescent drug use. Adolescence, XIX(73), 89-97.

McMaster, L. E., & Wintre, M. G. (1996). The relations between perceived parental reciprocity, perceived parental approval, and adolescent substance use. Journal of Adolescent Research, 11(4), 440-460.

Merton, R. K. (1957). Social theory and social structure. Glencoe, Ill: Free Press.

Milman, D. H., Bennett, A. A., & Hanson, M. (1983). Psychological effects of alcohol in children and adolescents. Alcohol, Health and Research World, 7, 50-53.

Minuchin, S., Montalvo, B., Guerney, B. G., Jr., Rosman, B. L., & Schumer, F. (1967). Families of the slums: An exploration of their structure and treatment. New York: Basic Books.

Minuchin, S., Rosman, B. L., & Baker, L. (1978). Psychosomatic families: Anorexia nervosa in context. Cambridge, Mass: Harvard University Press.

Mober, D. P., & Piper, D. L. (1990). Obtaining active parental consent via telephone in adolescent substance abuse prevention research. Evaluation Review, 14(3), 315-323.

Mothersead, P. K., Kivlighan, D. M. Jr., & Wynkoop, T. F. (1998). Attachment, family disfunction, parental alcoholism, and interpersonal distress in late adolescence: A structural model. Journal of Counseling Psychology, 45(2), 196-203.

Mulford, H. A. (1963). Drinking and deviant drinking, U. S. A. Quarterly Journal of Studies on Alcohol, 25, 634-650.

Mulford, H., & Wilson, R. (1966). Identifying problem drinkers in a household health survey: A description of field procedures and analytical techniques developed to measure the prevalence of alcoholism. Washington, DC: U. S. Department of Health, Education, and Welfare, Public Health Service.

Newcomb, M. D., & Bentler, P. M. (1988). Consequences of adolescent drug use: Impact on the lives of young adults. Newbury Park, CA: Sage.

Newcomb, M. D., & Bentler, P. M. (1989). Substance use and abuse among children and teenagers. American Psychologist, 44(2), 242-248.

Newcomb, M. D., & McGee, L. (1991). Influence of sensation seeking on general deviance and specific problem behaviors from adolescence to young adulthood. Journal of Personality and Social Psychology, 61, 614-628.

Nixon, S. J., & Parsons, O. A. (1989). Cloninger's tridimensional theory of personality: Construct validity in a sample of college students. Personality and Individual Differences, 10(12), 1261-1267.

Nye, F. (1958). Family Relationships and Delinquent Behavior. New York: Wiley.

Olson, D. H., & McCubbin, H. (1983). Families, what makes them work. Beverly Hills, CA: Sage Publications.

Palmer, R. B., & Liddle, H. A. (1996). Adolescent drug abuse: Contemporary perspectives on etiology and treatment. In G. M. Blau & T. P. Gullota (Eds.) Adolescent Dysfunctional Behavior: Issues in Children's and Families Lives (Vol. 3, pp. 114-138). Thousand Oaks California: Sage Publications.

Perosa, S. L., & Perosa, L. M. (1993). Relationships among Minuchin's structural family model, identity achievement, and coping style. Journal of Counseling Psychology, 40(4), 479-489.

Petersen, A. C. (1988). Adolescent development. Annual Review of Psychology, 39, 583-607.

Petraitis, J., Flay, B. R., & Miller, T. Q. (1995). Reviewing theories of adolescent substance use: Organizing pieces in the puzzle. Psychological Bulletin, 117(1), 67-86.

Phares, V. (1996). Fathers and developmental psychopathology. New York: Wiley.

Prendergast, T. J. Jr. (1974). Family characteristics associated with marijuana use among adolescents. Journal of the Addictions, 9, 827-839.

Pritchard, M. E., & Martin, M. (1996). Factors associated with alcohol use in young adulthood. Substance Use and Misuse, 31(6), 679-689.

Ratti, L. A., Humphrey, L. L., & Lyons, J. S. (1996). Structural analysis of families with a polydrug-dependent, bulimic, or normal adolescent daughter. Journal of Consulting and Clinical Psychology, 64(6), 1255-1262.

Reiss, D. (1981). The family's construction of reality. Cambridge, Mass.: Harvard University Press.

Riley, J. W., Jr., & Marden, C. F. (1947). The social pattern of alcoholic drinking. Quarterly Journal of Studies on Alcohol, 8, 265-273.

Saunders, B. E., & Schuchts, R. A. (1987). Assessing parent child relationships: A report of normative scores and revalidation of two clinical scales. Family Process, 26, 373-381.

Schinke, S. P. (1984). Preventing teenage pregnancy. In M. Hersen, R. M. Eisler, & P. M. Miller (Eds.). Progress in Behavior Modification (Volume 16, pp. 31-64). San Francisco: Academic Press.

Schwarz, R. M., Burkhart, B. R., & Green, S. B. (1978). Turning on or turning off: Sensation seeking or tension reduction as motivational determinants of alcohol use. Journal of Consulting and Clinical Psychology, 46(5), 1144-1145.

Severson, H. H., & Ary, D. V. (1983). Sampling bias due to consent procedures with adolescents. Addictive Behaviors, 8, 433-437.

Severson, H. H., & Biglan, A. (1989). Rationale for the use of passive consent in smoking prevention research: Politics, policy and pragmatics. Preventive Medicine, 18, 267-279.

Sewell, W. H., & Hauser, R. M. (1975). Education, Occupation and Earnings: Achievement in the Early Career. New York: Academic Press.

Shedler, J., & Block, J. (1990). Adolescent drug use and psychological health: A longitudinal inquiry. American Psychologist, 45(5), 612-630.

Simmons, R. G., & Blyth, D. A. (1987). Moving into adolescence: The impact of pubertal change and school context. Hawthorn, NY: Aldine de Gruyter.

State of Michigan. (1998). School district data: General characteristics profile-detailed (002), Garden City School District, State ID: 82050 [On-line]. Available: <http://www.state.mi.us/dmb/mic/data/educ/sddb/data/sd15540b.prn>

Stein, J. A., Newcomb, M. D., & Bentler, P. M. (1987). An eight-year study of multiple influences on drug use and drug use consequences. Journal of Personality and Social Psychology, 53, 1094-1105.

Stice, E., & Gonzales, N. (1998). Adolescent temperament moderates the relation of parenting to antisocial behavior and substance use. Journal of Adolescent Research, 13(1), 5-31.

Stierlin, H. (1972). Separating parents and adolescents. New York: Quadrangle.

Sullivan, H. S. (1953). The interpersonal theory of psychiatry. New York: Norton.

Swaim, R. C., Oetting, E. R., Edwards, R. W., & Beauvais, F. (1989). Links from emotional distress to adolescent drug use: A path model. Journal of Consulting and Clinical Psychology, 57(2), 227-231.

Thompson, T. L. (1984). A comparison of methods of increasing parental consent rates in social research. Public Opinion Quarterly, 48, 779-787.

Wallerstein, J. S. (1984). Children of divorce: Preliminary report of a ten-year follow-up of young children. American Journal of Orthopsychiatry, 54, 444-458.

Webb, J. A., Baer, P., Caid, C. D., McLaughlin, R. J., McKelvey, R. S. (1991). Concurrent and longitudinal assessment of risk for alcohol use among seventh graders. Journal of Early Adolescence, 11, 450-458.

Wierson, M., Armistead, L., Forehand, R., Thomas, A. M., & Fauber, R. (1990). Parent-adolescent conflict and stress as a parent: Are there differences between being a mother or a father? Journal of Family Violence, 5, 187-197.

Wilks, J. & Callan, V. (1990). Adolescents and alcohol. In P. Heaven & V. Callan (Eds.) Adolescence: An Australian perspective. Sydney: Harcourt Brace.

Wills, T. A., McNamara, G., Vaccaro, D., & Hirky, A. E. (1996). Escalated substance use: A longitudinal grouping analysis from early to middle adolescence. Journal of Abnormal Psychology, 105(2), 166-180.

Wills, T. A., Vaccara D., & McNamara, G. (1994). Novelty seeking, risk taking, and related constructs as predictors of adolescent substance use: An application of Cloninger's theory. Journal of Substance Abuse, 6, 1-20.

Windle, M. (1990). A longitudinal study of antisocial behaviors in early adolescence as predictors of late adolescent substance use: Gender and ethnic group differences. Journal of Abnormal Psychology, 99(1), 86-91.

Windle, M. (1993). A retrospective measure of childhood behavior problems and its use in predicting adolescent problem behaviors. Journal of

Studies on Alcohol, 54, 422-431.

Wingard, J. A., Huba, G. J., & Bentler, P. M. (1979). The relationship of personality structure to patterns of adolescent substance use. Multivariate Behavioral Research, 14, 131-143.

Wortman, C. B., & Loftus, E., & Marshall, M. E. (1988). Psychology (3rd ed.). New York: Alfred A. Knopf.

Wynne, L. C., Ryckoff, I. M., Day, J., & Hirsch, S. I. (1958). Pseudomutuality in the family relationships of schizophrenics. Psychiatry, 21, 205-220.

Zastowny, R. R., & Lewis, J. L. (1989). Family interactional patterns and social support systems in single-parent families. Journal of Divorce, 13(2), 1-40.

Zelnick, M., & Kantner, J. F. (1980). Sexual activity, contraceptive use and pregnancy among metropolitan-area teenagers: 1971-1979. Family Planning Perspectives, 12, 230-237.

ABSTRACT

PERSONALITY AND FAMILY RELATIONSHIP CORRELATES OF DRUG ABSTENTION IN ADOLESCENTS

by

JACQUELINE M. HASKIN

May, 1999

Adviser: Stephen Hillman, Ph.D.

Major: Educational Psychology

Degree: Doctor of Philosophy

Considerable research has been devoted to studying the causes and correlates of drug use and abuse among adolescents. This literature has revealed that occasional use signifies developmentally appropriate experimentation, while the extreme behaviors of abuse and abstention are signs of underlying emotional problems. Abstention has not been directly researched. Information on abstention has been a byproduct of the use/abuse literature.

Personality and family relationship correlates of drug abstention were investigated in a sample of 292 seniors from a Midwestern, middle-class suburban high school. Using the level of substance involvement as a predictor of adjustment, abstainers, user/experimenters, and abusers were compared on personality and family relationship variables. Levels of adjustment were evaluated in terms of the personality characteristics of novelty-seeking, harm avoidance, and reward dependence and the level of relationship problems with the father independent of the adolescent/mother relationship. Additional

information was gathered on demographic and background factors.

The primary hypothesis that abstention is related to a personality profile high in reward dependence and harm avoidance, and low in novelty seeking behaviors was partially supported. A strong relationship between abstention and a personality low in novelty seeking behaviors was found.

The secondary hypothesis that abstention is related to low levels of relationship problems with the father independent of the adolescent/maternal relationship was not supported. The results showed that differences in perceived conflict with parents are not a significant influence on substance abuse level.

A strong relationship between substance use level and grade point average and religiosity was found. Abstainers achieved significantly higher grade point averages than user/experimenters and abusers. Abstainers reported attending religious activities or services significantly more frequently than the other groups, and abstainers were significantly more likely to consider religion extremely important in their lives than user/experimenters and abusers. Implications for incorporating these findings into programs aimed at preventing drug abuse were presented.

AUTOBIOGRAPHICAL STATEMENT

Jacqueline M. Haskin

- Degrees:** 1999
Doctor of Philosophy - Educational Psychology
Wayne State University, Detroit, Michigan
- 1991
Master of Arts - Educational Psychology
Wayne State University, Detroit, Michigan
- 1965
Master of Education - Special Education
Wayne State University, Detroit, Michigan
- 1960
Bachelor of Science
Speech Therapy/General Elementary Education
Wayne State University, Detroit, Michigan
- Experience:** 1991-1993, and 1997-Present
Staff Psychologist
Samaritan Counseling Center of Southeastern Michigan
Farmington Hills, Michigan
- 1993-1994
Doctoral Intern
Mercy Hospital of Detroit, Detroit, Michigan
- 1990-1991
Master's Practicum Student
Oakland University Psychology Clinic, Rochester, Michigan
- 1990-1991
Teaching Assistant
Wayne State University, Detroit, Michigan
- Licensure:** Permanent Teaching Certificate - State of Michigan
Limited License - Masters in psychology - State of Michigan
- Professional Memberships:** American Psychological Association
Michigan Psychological Association
American Counseling Association