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TOWARD AN ECO-DEVELOPMENTAL THEORY OF ADOLESCENT SUBSTANCE USE IN VENEZUELA

By

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ABSTRACT

TOWARD AN ECODEVELOPMENTAL THEORY OF ADOLESCENT SUBSTANCE USE IN VENEZUELA

By

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This study surveyed school-attending adolescents in Caracas, Venezuela in order to explore the prevalence of substance use and to identify risk and protective factors that influence the age of first drug use among this population. The theoretical premise of this study was that the synergistic effects of the Venezuelan adolescent's social ecology offers a foundation from which to develop intervention strategies for the prevention and treatment of adolescent substance use. Studies of risk and protective factors related to adolescent substance use have identified several targets for intervention within families and communities in the United States. These studies have led to the formation of family therapy and prevention treatments, many of which have become standard evidence-based interventions for youth involved with licit and illicit substances. Even though these intervention strategies exist for U.S. populations, questions remain unanswered regarding whether the same risk and protective factors related to adolescent substance use are operative in the Venezuelan culture, and if so, how these interventions should be adapted to be effective with this population. The purpose of this study was to assess for the extent to which known risk and protective factors for U.S. populations exist among school-attending youth in Caracas, Venezuela.

A sample of 1,831 Venezuelan youth attending 14 schools in two school districts located on the western side of Caracas, Venezuela participated in the study. Descriptive

analyses provided prevalence rates of first use of eight different drugs (cigarettes, alcohol, inhalants, ecstasy, crack cocaine, heroin, non prescribed pharmaceuticals, and marijuana) for the sample. Findings indicated that high percentages of youth (81.5%) had consumed alcohol, and approximately one third had used cigarettes. Incidence of all other drugs in the study had very low reported rates ranging from .3% (crack) to 3.7% (marijuana).

Hierarchical Linear Modeling was used to test the relationships between six variables that have been shown to covary with age of first drug use in the U.S. (family attention, externalizing behavior, peer drug influence, school climate, gender, and socioeconomic status). Only family attention, externalizing behavior, and gender were supported as level-1 covariates, while mean socioeconomic status was found to be a significant level-2 covariate of age of first drug use. Implications for family therapy treatment and prevention professionals are provided as well as areas for future research.

Esta obra se dedica a:
Norelis: esposa, madre, amante, amiga, compañera, e inspiración, doy gracias a Dios por ti.
Y a mis hijos, Caleb, Amber, Scarlett, y Viviana
quienes han soportado todo sin queja alguna; son mi riqueza y mi gozo.

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Each you in your own way has contributed to this work and thus it is the work of all of us. To you and to those not mentioned in these short lines, thank you for accompanying me on this journey. With every end, there is a new beginning. So, as I end one phase, I begin another; one that all of you helped create. Thank you!

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I: OVERVIEW

Introduction

Illicit drug use and the abuse of legal substances is a prominent concern for public health officials throughout the world (Corroa, Guindon, & Sharma, 2000; WHO, 2004; WHO, 1997). It is reported that every year tobacco use alone is responsible for approximately four million deaths worldwide, and alcohol abuse is even more costly to human life and productivity (WHO, 2004). Research is emerging that points to the long-term negative consequences of chronic marijuana use on selective cognitive functioning and on negative effects for respiratory functioning similar to those caused by sustained tobacco use (WHO, 1997). Goldman, Oroszi and Ducci (2005) in a review of the literature on addiction research report that worldwide there are 2 billion alcohol users, 1.3 billion tobacco users, and 185 million users of illicit drugs, and that these three categories account for 12.4% of the global deaths in 2001. In the U.S. alone, these authors report that addictive drugs are the cause of approximately 590,000 deaths, and are responsible for injury or illness to almost 40 million individuals every year. For purposes of this study, use of any substance, licit (i.e., alcohol, tobacco) and illicit (e.g., cannabis, cocaine, heroin, etc.), by an adolescent will be referred to as substance use or abuse unless otherwise specified.

Adolescent substance use is of particular concern because early initiation predicts later misuse (Spoth, Guyll, & Day, 2002). For example, if the current trend among adolescent tobacco use were to continue, it is predicted that 250 million children living today will die of tobacco-related causes (Warren, Riley, Asma, Eriksen, Green, et al.,

2000). Alcohol use among youth is associated with significant increases in suicides, motor vehicles accidents, and drownings (WHO, 2004). Cannabis use among youth is also linked to increases in motor vehicles accidents (WHO, 1997).

Adolescent Substance Use in the U.S.

In the U.S., Johnston, O'Malley and Bachman (2001) report that 7.4% of 8th grade students and 20.6% of 12th grade students smoked cigarettes daily, 14.1% of 8th grade students and 30.0% of 12th grade students engaged in binge drinking (defined by having 5 or more drinks on a single occasion in the past two weeks), and 19.5% of 8th grade students and 40.9% of 12th grade students used illegal drugs in the past year.

Problem behaviors including substance abuse among youth in middle school frustrate learning and increase susceptibility to antisocial influences. This in turn places them at risk for school failure, involvement in the criminal justice system, and health problems (Dryfoos, 1990; Jessor, & Jessor, 1977; Simons-Morton, Crump, Saylor, & Yu, 1999). Evidence suggests that the transition into middle school is a particularly critical time for youth. Prior to middle school (i.e., preadolescents in elementary school) behavior problems are uncommon, but show considerable increase during adolescence (Johnston, O'Malley, & Bachman, 1994). For example, these authors report that less than 10% of sixth graders (approximately 11 to 12 years of age) have used tobacco compared to about 30% of eighth and 60% of 11 graders. Similarly, only 5% of sixth graders have used alcohol, compared to almost 70% of eighth graders. Unfortunately, for some children early adolescence is the beginning of a downward spiral from which they never recover (Eccles, Lord, & Midgley, 1991).

Treatment and Prevention Models

Treatment and prevention models have been developed in order to interrupt the downward spiral in which many youth find themselves. Both treatment and prevention sciences are built on the idea that there are empirically identifiable patterns of behavior or contexts that serve as risk or protective factors (Hawkins, VanHorn, & Arthur, 2004) in the development of adolescent substance abuse. A risk factor is something that increases the chance that substance-abusing behavior will occur. A protective factor acts as moderator, or mediator buffering or reducing the effect of risk exposure and is, therefore, more than simply the opposite of a risk factor. (Hawkins, Catalano, & Miller, 1992). Studies have identified mental health (Clark & Winters, 2002; Colby, Lee, Lewis-Esquerre, Esposito-Smythers, & Monti, 2004; Swadi, 1999), parental and family relationships (Chassin, Ritter, Trim, & King, 2003; Stanton & Todd, 1982), peer relationships (Bauman & Ennett, 1994; Hussong 2002), school bonding (Hill & Werner, 2006; Murguia, Zeng-yin, & Kaplan, 1998), religion (Chen, Dormitzer, Bejarano, & Anthony, 2004), and neighborhood environment (Duncan, Duncan, & Strycker, 2002) to be important factors in the development of substance use among adolescents. Treatment and prevention interventions attempt to reduce specific risk factors and increase protective factors in an effort to sway the developmental trajectory of the adolescent toward health. However, in order for these strategies to be efficient they must be based on a foundation of empirical research that is conducted within a cultural context (Castro, Barrera, Martínez, 2004; Hecht, Marsiglia, Elek, Wagstaff, Kulis, et al., 2003). This study tested how four of the most consistently identified risk and protective factors in the

literature influenced the onset of adolescent substance abuse in Venezuela in a sample of school-attending youth.

The bulk of the literature emphasizes two aspects of the parental relationship as predictive of substance abuse onset among adolescents: Parental warmth or supportiveness and parental monitoring (Barnes, Reifman, Farrell, & Dintcheff, 2000). Following the example of Anthony and colleagues (Dormitzer, Gonzalez, Penna, Bejarano, Obando, et al. 2004) in an international study of risk factors for school-attending adolescents in Central America, this study will combine these two dimensions (i.e., parental supportiveness and parental monitoring) into a composite variable called family attention.

Externalizing behavior is a mental health construct that refers to a grouping of behavior problems manifested in children's outward behavior and that depict the child negatively acting on her or his *external* environment (Eisenberg, Cumberland, Spinrad, Fabes, Shepard, et al. 2001), externalizing behavior has been consistently linked to substance use among teens (e.g., Kaplow, Curran, & Dodge, 2002; Schuckit, et al., 2003).

Peer relationships are a robust predictor of adolescent substance abuse in the literature (Bauman & Ennett, 1994) with youth who are more embedded in peer contexts with delinquent youth being more likely to use substances themselves (Hussong, 2002).

Additionally, research has found that school climate, comprised of a combination of a positive affiliation toward school and characteristics of the environment in which the school is nested, may serve a protective function against many antisocial behaviors (Ennet, Flewelling, Lindrooth, Norton, 1997; Hill & Werner, 2006).

The Eco-Developmental Model

Ecological theory as set forth in Bronfenbrenner's Eco-developmental model (Bronfenbrenner, 1979; Bronfenbrenner & Ceci, 1994) offers a useful framework to examine how risk and protective factors interact to influence adolescent development and drug use in differing cultures. Bronfenbrenner posits that an individual interacts with different contexts to form and guide development, and that these contexts are nested within four layers or systems of influence in which the individual lives. These four layers are the microsystem, mesosystem, exosystem, and macrosystem. The layers evolve in increasing levels of abstraction from direct influences to more indirect influences on the developing individual. The microsystem is comprised of elements in the individual's immediate environment such as family, peers, and school. The mesosystem refers to how these microsystems interact to influence the individual's development. The exosystem refers to systems that exert their influence on the individual indirectly through the microsystem (e.g. a parent's work influences the parent who influence the child; a teacher's relationship with school administrators affects the teacher's interaction with child). The macrosystem is the most abstracted of the systems and refers to influences such as cultural values, national economics, and policies.

Environments are meaningful not only for what they actually contain, but for the meaning that is created within them. For human ecologists, environments are "subjectively experienced.... [People] perceive, interpret, and create their meaning" (Bubolz & Sontag, 1993, p. 23). Social contexts, therefore, have a wide-ranging influence

on an individual's decision to engage in substance use. From this perspective, environments are not determinants of human behavior but create constraints as well as opportunities (Bubolz & Sontag, 1993). Development is not something that just happens to children. Rather, they are active participants in the contexts in which development occurs. People can respond, change, act on, and modify their environment, and thus, in this sense, contribute to their own development (Bronfenbrenner, 1995).

From an ecological perspective, risk and protective factors for adolescent substance abuse are the result of the interaction of an individual with his or her context. Therefore, substance abuse can be defined as the "phenotypic expression of the interaction of a genetic predisposition(s) (genotype) to substance abuse, certain personal or environmental risk factors, and the psychopharmacological effects of the drugs themselves" (Brook, Brook, & Pahl, 2006, p. 39). While psychiatric treatment that includes a pharmacologic regimen might be used to treat the underlying pathophysiological predispositions and comorbid psychiatric disorders present, prevention and treatment models intervene to change environmental risk and protective factors, as well as behavioral effects of the drugs themselves (e.g., craving, relapse prevention, etc.). In order to maximize the effectiveness of these models, the interventions should be adapted to the individual and his/her specific context, which includes a careful consideration of the cultural variations that exist within psychosocial domains.

Venezuela as a Context for Adolescent Substance Use

This study took place in the country of Venezuela. Subjective reports of substance abuse among youth in Venezuela are alarming. Some studies have begun to shed light on the prevalence of adolescent substance abuse in the Spanish Speaking countries of the Americas (e.g., Dormitzer, et al., 2004). However, between country variability in prevalence rates and the variance in adolescent substance use explained by risk and protective factors precludes assumptions of homogeneity based on a common language and cultural heritage. Different national histories, governmental policies, economics, geographic locations, and the like are macrosystemic effects that influence the exosystems, mesosystems, and microsystems that comprise the proximal processes that in turn interact with a genotype to determine the developmental trajectory of the individual. Venezuela constitutes a distinct context that warrants careful consideration in order to culturally adapt or develop effective prevention and treatment models.

Statement of the Problem

A review of the literature reveals that adolescent substance abuse is not caused by any single agent, but is the result of the interplay of several factors that interact with the characteristics of the developing adolescent (Hawkins, Catalano, & Miller, 1992; Swadi, 1999). Although drug use is a global problem, few studies exist that detail either the state of drug use among Venezuelan youth, or what risk and protective factors might operate to influence adolescents to use substances. For example, a recent study sponsored by the Inter-American Drug Abuse Control Commission of the Organization of American States looked into the prevalence of substance use among school-attending youth in the countries of South America. Unfortunately, Venezuela was not included in this study.

Of those studies that do exist on drug use among Venezuelan youth, the information they provide is very limited in depth and in scope. For example, few demographic variables are provided, and only scant information is given on which drugs are most frequently consumed. Additionally, methodological errors render some of the results dubious. These and other gaps in the extant literature merit further research into adolescent drug use in Venezuela.

Empirically driven prevention and treatment models have been shown to be efficacious in reducing problem behaviors among youth (Ozechowski & Liddle, 2000) in the U.S. However, the basic research necessary to develop a culturally appropriate version of these models is still lacking for Venezuela. Given the global prevalence of substance misuse and its trail of human suffering and misery, it is important to extend this knowledge into other countries.

Purpose of the Study

The purpose of this study was to begin to lay the empirical foundations necessary for the development of treatment and prevention models of adolescent substance use in Venezuela. Since a sample that would be representative of the nation of Venezuela was out of the scope of the present study, this research may be viewed as a pilot study in one section of the capital city of Caracas. In order to establish causal paths in the onset of adolescent substance use longitudinal data are necessary (Heise, 1970). The present study used a cross-sectional design, and as a result, is viewed as exploratory.

The study identified the age of first use of eight different drugs for school-attending youths ages 11 to 19 in fourteen Venezuelan high schools from the capital city

of Caracas. The study also explored whether the relationship between four risk and protective factors known to be associated with adolescent drug use in the U.S. is operative as well for Venezuelan school-attending youth in Caracas. Ecological theory is used to conceptualize the manner in which these factors influence the development of adolescent substance use in Caracas, Venezuela.

Significance of the Study

There are several benefits to conducting a study that identifies risk and protective factors linked to substance use in Venezuela. First, in order to inform developers of effective and cost efficient prevention strategies or treatment interventions, research that describes prevalence of substance use among youth and the mechanisms that operate to influence its onset and maintenance is needed. Second, research that clearly defines the problem of adolescent substance use in Venezuela will aid policy makers and educators in their attempt to guide youth into responsible citizenry. Third, given the scarcity of research into this topic in Venezuela, this study will serve as a starting point for future work by identifying pitfalls and promises in conducting research in Venezuela. Fourth, studying adolescent substance use in other cultures (e.g., Venezuela), may produce information that increases our understanding of the mechanism at work in our own U.S. culture.

Theory Development

Bronfenbrenner (1979) originally conceptualized human development as "a set of nested structures, each inside the next, like a set of Russian dolls" (p. 87). The "nested

structures" or environments that he identified to explicate contextual influences on child development were: the microsystem, the mesosystem, the exosystem, and the macrosystem. The microsystem consists of persons who consistently interact directly with the developing child. The mesosystem involves linkages between the child's microsystems or reciprocal influences between contexts (e.g., family, school, neighborhood). The third level of influence, the exosystem, involves settings in which the child's development is indirectly influenced through interaction between a microsystem and external system (e.g., mother's workplace). This context is the point at which society has influence upon what goes on within the family. The final level of influence, the macrosystem, involves the general culture in which the individual lives including values and belief systems that influence the child's development.

Later, Bronfenbrenner recognized that a person–context model was insufficient to address the challenges of delineating and understanding process. He espoused the process-person-context model of human development, which "permits analysis of variations in developmental processes and outcomes as a joint function of the characteristics of the environment and of the person" (Bronfenbrenner, 1989, p. 197). He also proposed the conceptualization of the chronosystem to encompass the evolving interconnected nature of the person, environment process over time. These additions led to the identification of the process-person-context-time model (PPCT) of human development.

As Bronfenbrenner further developed the theory, process came to occupy an increasingly important role. He emphasized that discernible differences in individual development, not only across but also within societies, result from the interplay between

individual and environment effects. In his bioecological theory of human development (Bronfenbrenner & Ceci, 1994), he embraced both sides of the *nature vs. nurture* argument and posited that individuals possess heritable genetic qualities whose potential is actualized through progressively more complex reciprocal interaction with persons, objects, and symbols in the immediate environment through mechanisms known as proximal processes. According to Bronfenbrenner, the magnitude and the developmental effectiveness of proximal process are seen to vary as a joint function of the characteristics of the setting in which they take place, the persons living in that environment and the nature of the developmental outcomes under investigation. In other words, the focus of this model is on the "how" certain kinds of genetic potentials (genotype) are actualized to determine distinct developmental outcomes (phenotype) of effective psychological functioning. Not all of the genotypic possibilities that the child inherits will necessarily progress into a phenotypic form. Which phenotypes ultimately emerge will depend on the interaction between the principal proximal settings of the developing child (mesosystem). Contexts influence the proximal processes through resources that are made available and in terms of the degree of stability and consistency provided over time for their effective functioning.

From this perspective, the developing child begins with an inherited genetic potential that follows a path. However, from the very outset the path through which genotypes are transformed (their potential actualized) into phenotypes (developmental outcomes) is the mechanism of proximal processes. These processes are driven by a genetic pattern that selectively attends, acts, and responds, while simultaneously being shaped by ongoing reciprocal interaction with persons, objects, and symbols in the

immediate environment over time. Even developmental changes like puberty that would seem to be biologically based and thus acontextual, have been shown to be mediated by family, peer, and school influences (Simmons & Blyth, 1987). Therefore, social contexts are always causally involved to some extent in every aspect of human development (Bateson, Jackson, Haley, & Weakland, 1968).

In the following pages, it is illustrated how various aspects of Bronfenbrenner's theory on the ecology of human development was used to guide this research. Specifically examined was the role context plays in the onset of adolescent drug use in Caracas, Venezuela. Accordingly, the study explored adolescent development in the microsystems of the family, the peer group, the interaction between these systems (what Bronfenbrenner calls the mesosystem), and the differential effects of this occurring within a school (a level of analysis Bronfenbrenner calls the exosystem) and within the culture of a Spanish-speaking, urban, South American city (part of what Bronfenbrenner calls the macrosystem). This study was limited to a cross sectional design. As a result, the ecological development over time (what Bronfenbrenner referred to as the chronosystem) was not considered.

Research Questions, Hypotheses, and Measures

The research questions posed in this study and specific hypotheses related to them are presented below. Hypotheses were advanced in areas in which previous research in the U.S. and other countries has indicated relationships. Other questions were considered exploratory in nature; therefore, no hypotheses were formulated for them. The contextual variables in this study are: family attentiveness, externalizing behavior, peer

relationships, and school climate, and are defined below. Individual/demographic variables in this study are: gender, SES, and race. Legal substances are tobacco and alcohol, , and illegal substances are marijuana, prescription drugs, cocaine, crack, heroin, inhalants, or ecstasy. The dependent variable is age of first use of a substance, and is a continuous outcome.

Specific Questions and Hypotheses

1. What percentage of Venezuelan youth use each of the following drugs: tobacco, alcohol, marijuana, cocaine, crack, heroin, amphetamines, inhalants, ecstasy, or prescription?

   Data analysis for question 1: Descriptive.

2. Does age of first drug use vary by individual variables?

   2.1. Does age of first actual drug use vary by gender?

   Hypothesis: The age of first drug use will vary by gender.

   2.2. Does age of first drug use vary by SES?

   Hypothesis: The age of first drug use will vary by SES.

   2.3. Does age of first drug use vary by race?

   Hypothesis: The age of first drug use will vary by race.

   2.4. Does age of first drug use vary by family attention?

   Hypothesis: The age of first drug use will vary by family attention.

   2.5. Does age of first drug use vary by externalizing behavior.

   Hypothesis: The age of first drug use will vary by externalizing behavior.

2.6. Does age of first drug use vary by peer drug use?

Hypothesis: The age of first drug use will vary by peer drug use.

2.7. Does age of first drug use vary by school climate?

Hypothesis: The age of first drug use will vary by school climate.

Data analysis for questions 2.1- 2.7: Hierarchical Linear Modeling (HLM)

3. Are school characteristic related to the onset of drug use?

3.1. Does School Condition help to explain the variance in age of first drug use?

Hypothesis: School Condition will be related to age of first drug use.

3.2. Does Mean SES help to explain the variance in age of first drug use?

Hypothesis: Mean SES will be related to age of first drug use.

3.3. Does Mean School Climate help to explain the variance in age of first drug use?

Hypothesis: Mean School Climate is related to age of first drug use.

Data analysis for question 3.1-3.3: HLM.

Measures

The PACARDO-V

The PACARDO-V is an adapted version of the PACARDO questionnaire for use in Venezuela. The PACARDO (which stands for **PA**nama, **C**entral **A**merica, and **R**epublica **DO**mincana) questionnaire was developed for use in a NIDA-funded grant "Cross-National Research in Clusters of Drug Use" (Dormitzer, et al., 2004). It is a standardized self-administered questionnaire for adolescents ages 12-17 and was used in

studies that included nationally representative samples of students in Central America, Panama, and the Dominican Republic (N = 12,797). The Spanish version of the PACARDO-V has been provided in Appendix A, and the English version of the PACARDO-V has been provided in Appendix B.

The MAMBI

The MAMBI (Which stands for Guía de Observacion **M**edio **AMBI**ente del Salon, Colegio y Vecindario, or Observational Guide for the Classroom, School, and Neighborhood Environment) was developed for use in a NIDA-funded grant "Cross-National Research in Clusters of Drug Use" (Dormitzer, et al., 2004) and is an observational guide to be filled out by the teacher, and/or school administrators. The purpose of the MAMBI is to assess for the environmental conditions in which the children are studying (e.g., Are there enough desks and chairs for each student to have one? Is there barbed wire or broken glass on the top of the walls that surround the school?). A copy of the MAMBI in both Spanish and English has been provided in Appendix C.

Conceptual and Operational Definitions

Individual Level Variables

Family attention.

Conceptual – this variable taps two dimensions that have been shown to be important in the onset of adolescent substance using behavior: (a) the extent to which the youth's relationship with parents or caretakers reflects positive communication, warmth, and cohesion, and (b) the extent to which the

youth's relationship with parents or caretakers reflects positive boundary setting, monitoring, and involvement.

Operational – the average score on items 14, 15, 17, 25 and 16, 18, & 20, respectively on the PACARDO-V questionnaire. The scores were standardized to have a mean of 0 and a standard deviation of 1 for ease of interpretability. A positive score indicates above average family attention.

Externalizing behavior.

Conceptual – extent of youth participation in delinquent acts and risky behavior.

Operational – the average core on items 40, 41, 42, & 43, 48 on the PACARDO-V questionnaire. The scores were standardized to have a mean of 0 and a standard deviation of 1 for ease of interpretability. A positive score indicates above average externalizing behavior.

Peer drug use.

Conceptual – extent of drug use among the youth's peer group.

Operational – the average score on items 30, 31, & 33-36. on the PACARDO-V questionnaire. The scores were standardized to have a mean of 0 and a standard deviation of 1 for ease of interpretability. A high score indicates above average affiliation with a peer group that would expose the youth to drugs.

School climate.

Conceptual – student perception of their sense of acceptance and belonging to their school.

Operational – the average score on items 44, 50, 51, & 52 on the PACARDO-V questionnaire. The scores were standardized to have a mean of 0 and a standard deviation of 1 for ease of interpretability. A high score indicates above average school climate.

Socioeconomic status (SES).

Conceptual – An individual's or group's position within a hierarchical social structure. Socioeconomic status depends on a combination of variables, and will be defined in this study through student response to caretaker's education level, type of neighborhood of residence (housing project/barrio/casa, urbanization/apartment, quinta), number of vehicles owned by immediate family, and the number bedrooms in their place of residence.

Operational – the average score on items 6, 9, 7, 12, & 13 on the PACARDO-V questionnaire. The scores were standardized to have a mean of 0 and a standard deviation of 1 for ease of interpretability. A positive score indicates above average SES.

Race.

Conceptual – In social science and popular understanding, race is thought to refer to phenotypical differences between groups of people, while ethnicity denotes cultural differences. In a review of international census forms, Morning (in press) found that only the United States uses separate questions to measure its citizens' race versus their ethnicity. In Venezuela, as in most South American countries, ethnicity is used to refer to indigenous

populations while race is secondary category coming after the word color and referring to skin tone (Hooker, 2005; Morning, in press). Therefore, for the present study race will be conceptualized as skin tone and will use 4 popular designations from Venezuelan culture (i.e., Negra, Morena, Blanca, and Indigina or Black, Brown, White, and Indigenous respectively).

Operational – item five on the PACARDO-V questionnaire.

Second Level Variables

Mean school climate.

Conceptual – The extent to which the school maintains an environment that fosters a sense of belonging and acceptance among students.

Operational – the mean student scores within school *j* of student climate measure.

Mean peer drug use.

Conceptual – Average aggregate drug use by peers in a given school.

Operational – the mean score of students in school *j* of peer drug use measure.

Mean SES.

Conceptual – Average SES of students in school *j* of SES measure.

Operational – the mean score of students in school *j* of SES measure.

School condition .

Conceptual – an index of the general environment of the school building, resources for the students, and area adjacent to school property.

Operational – the composite score grouped by school of items 2-40 from the MAMBI questionnaire.

CHAPTER II: BACKGROUND

Review of the Literature

The premise of this study is that the synergistic effects of the adolescent's social ecology will offer a more firm foundation from which to develop intervention strategies for the prevention and treatment of adolescent substance abuse in the Venezuelan culture. It is common knowledge that parents exert a powerful influence, albeit positive or negative, over the development of their offspring (e.g., Hirschi & Gottfredson, 1993). However, parental influence does not occur in a social vacuum, and the effect of the parent-child relationship cannot be fully understood except within the context of social factors (Kraemer, Stice, Kazdin, Offord, & Kupfer, 2001; Von Bertalanffy, 1968). The effect that parents leverage over their offspring is likely to be moderated by the intersection of peer groups, which in turn are nested within schools and neighborhoods; all of which interact within an overarching culture.

Much research has been done to identify risk factors in adolescents related to the development of drug and alcohol problems in order to promote an understanding of the complex causal chains involved. This chapter will review the relevant literature regarding how individual characteristics, and influences from families, peer groups, schools, neighborhoods, and the Venezuelan culture effect the onset of substance use in adolescents.

Individual Influences on the Development of Substance Use in the U.S

Some family systems theorists have argued that all behavior must be understood within its systemic context (e.g., Bateson, 1972; Watzlawick, Weakland, & Fisch, 1974).

From this epistemology, it is illogical to view a behavior problem as an attribute of an individual. Following then, in order for a behavior to be characterized as aggressive, it must occur within a sequence of interactions and be assessed in a given social context that would enable such a conclusion. For example, in American Football, one player bumping helmets with another could be viewed as normal and within the rules of the game, aggressive and punishable by a penalty, or celebratory depending on the context in which it occurs.

In the context of human development, systems theory asserts that what is considered developmentally appropriate behavior is relative to a socially constructed standard within a determined context. For example, even with problems that are certainly the result of some biological abnormality or genetic marker such as childhood autism, there is evidence that behavioral problems have some association with family relationships and school environment (Morgan, 1988). This view does not hypothesize causality such that the parents *cause* the child's autism in a linear fashion. Linear thinking assigns a direct cause to problems and, consequently, assigns blame. Systems thinking, on the other hand, emphasizes the bidirectional nature of behavior in that the child's behavior, whatever its assumed cause, will impact that of the parents, which will in turn affect the child and so on (Watzlawick, Beavin-Bavelas, & Jackson, 1967). Whereas individual variables should not be viewed in isolation of their context, the systems-based ecodevelopmental model acknowledges that individual members do contribute uniquely to behavior problems, and should be considered for their implications in both the conceptualization and treatment of problem behavior (Bronfenbrenner, 1989).

Several variables have been identified in the literature as mechanisms through which individual characteristics may operate to form risk factors for the onset of alcohol and other drug use (AOD). Swadi, (1999), in a review of the literature points to numerous personality attributes that have been associated with AOD such as poor self control, high levels of novelty seeking, risk taking, ambition, negative affect, impulsiveness, hard working, self reliant, feeling capable and accepted, unsociable, untrustworthy, rebellious, and impulsive.

In another review of the literature, Colby, Lee, Lewis-Esquerre, Esposito-Smythers, and Monti (2004) suggest two important cognitive factors: alcohol outcome expectancies (i.e., greater endorsement of positive alcohol expectancies is associated with higher quantity and frequency of drinking) and craving (i.e., low urge-specific coping skills that are related to increased drinking). However, Martino and colleagues' (2006) findings suggest that attempts to alter adolescent alcohol expectancies are likely to fail unless they address the influence of immediate social factors on these beliefs.

Other researchers have stressed the role of gender and ethnicity in the development of adolescent alcohol use (Griffin, Botvin, Scheier, Diaz, & Miller, 2000). These authors found that Black youth reported the fewest risk factors and the lowest alcohol use, White youth reported the most risk factors and the highest alcohol use, and Hispanic youth reported the fewest protective factors and intermediate levels of alcohol use. Females were found to have a reduced tendency to develop drinking problems across all ethnicities in comparison to males.

Researchers have found that among childhood characteristics predicting adolescent alcohol use disorders, childhood mental health issues, (including conduct, attention

deficit hyperactivity, major depressive, and anxiety disorders) were all prominent factors in the onset of alcohol difficulties (e.g., Clark & Winters, 2002). However, some have suggested that a common genetic and environmental influence is responsible for the association between childhood mental disorders and alcohol and other drug use disorders (Waldman & Slutske, 2000). Tarter, Kirisci, Mezzich, Cornelius, Pajer, et al. (2003) reported on a unidimensional trait they called neurobehavioral disinhibition, an index formed from measures of affect, behavior, and cognition. They found that neurobehavioral disinhibition was successful at discriminating between boys at high average risk from those at low average risk of substance use at ages 10–12, and predicted substance use disorder at age 19 with 85% accuracy. Clark (2004) also suggests that a more parsimonious approach to the association between childhood mental health disorders and substance use is to consider an underlying common liability trait termed "psychological dysregulation."

The Role of Genetics

The role of genetics in the development of alcohol abuse and alcoholism has gained much momentum since Jellinek's early work (Jellinek, 1946). Research seems to indicate that problem drinking is a heritable family disorder with a genetic origin (e.g., Cloninger, 1987). In his widely cited study, Cloninger (1987) posited two types of alcoholism, Type I and Type II. The Type II alcoholic was set forth to distinguish those individuals who have a stronger genetic predisposition to, (a) initiate alcohol-seeking behavior, (b) have earlier onset of alcoholism, and (c) progress at a different rate from susceptibility to loss of control after drinking begins. National twin studies suggest that genetic factors explain

much of the variance in the development of alcoholism and other drugs (e.g., Hettema, Corey, & Kendler, 1999; Prescott & Kendler, 1999). Advances in genetic studies have led to the identification of some underlying genes that are substance-specific, such as the alcohol metabolic genes, and it is hoped that such advances will eventually lead to more successful treatment approaches (Goldman, Oroszi, & Ducci, 2005).

The implication of these studies is that individual characteristics are an important consideration in the understanding of the etiology of adolescent substance abuse. However, as Bronfenbrenner (1995) points out, characteristics of the individual are often studied as developmental outcomes, but seldom conceptualized as sources of variation in the person's susceptibility or risk to the developmental effects of proximal processes (i.e., enduring patterns of interaction between the person and his/her environment). In regards to his model Bronfenbrenner (1995) states,

> What is most revealing about proximal processes, however, is not the gain in predictive power that they provide, but their substantive and theoretical significance as the mechanisms of organism-environment behavioral interaction that drive development, and the profound ways in which these mechanisms are affected by characteristics of the developing person and of the environmental context in which the interaction takes place (pp. 626).

As such, no single factor or event can be said to "cause" addiction, genetically or otherwise. From this perspective then, causality ceases to be linear and becomes reciprocal in nature. The parents bring to the family of procreation certain values, traditions, rules, and boundaries from their families of origin (Bowen, 1974; Sullivan, 1953). While developing

both emotionally and physically within their context of peers, school, and community activities, the child brings influences from other systems into the family. The child reacts to his or her parent's behaviors, provoking the parents to react in turn, and so on, in a multiple reciprocal fashion (Cox & Ray, 1994). It is to these interactions that the focus of this section will now turn.

Microsystem Influence on the Development of Substance Use in the U.S.

Family as a Context

Family relationships have been found to play a major role in the development of adolescent substance abuse (Chassin, Ritter, Trim, & King, 2003; Hawkins, et al., 1992; Stanton & Todd, 1982). Poor parenting practices have been consistently associated with increased substance use and delinquency in adolescents (e.g., Belcher & Shinitzky, 1998; Calvert, 1997). Inconsistent discipline is positively related to development of drug use (Gorman-Smith, Tolan, Zelli, & Huesmann, 1996; King & Chassin, 2004). Reduced parental monitoring is associated with higher rates of adolescent misbehavior including the transition into substance use (Chilcoat, Breslau, & Anthony, 1996; Steinberg, Fletcher & Darling 1994) and increases in delinquency and aggression (Patterson, & Stouthamer-Loeber, 1984). Parental support was found to promote a protective function against adolescent substance use (Wills, Resko, Ainette, & Mendoza, 2004), as was positive parent-child communication (Anderson & Henry, 1994). In other studies increases in family cohesion (Hussong & Chassin, 1997), the parent-adolescent attachment relationship (Brook, Brook, Gordon, Whitemnam, & Chohen, 1990), authoritative parenting style (Baumrind, 1991; Fletcher, Darling, Steinberg, & Dornbusch, 1995), and

parent-adolescent autonomous-relatedness (Samuolis, Hogue, Dauber, & Liddle, 2005) were related to decreases in adolescent substance use.

In addition to the quality of family relationships, research has also examined the link between family structure and behavior problems in adolescents. For example, Blum and colleagues (2000) using data from the National Longitudinal Study of Adolescent Health found that youth from single-parent families were at greater risk than youth from two-parent families on every health risk behavior studied. However, the explanatory power of these analyses was so small that it only "marginally advances our understanding of the factors that contribute to the behaviors under study" (p. 2).

In the one study that was found that looked at the interaction between family functioning and family structure and its effect on adolescent substance abuse, Griffin et al. (2000) found that family structure was moderated by gender. Results indicated that boys from single-parent families engaged in more problem behaviors compared to girls and to youth of either gender from two-parent families. However, increased parental monitoring buffered these effects for boys in the single parent families.

Zhou, King, and Chassing (2006) looked at how family history density of alcoholism (FHD) interacted with a measure of family functioning (family harmony) over time to impact the development of adolescent substance use disorders (SUD). They found that family harmony had a protective effect for the development of SUD for low to moderate levels of FHD. However, this effect was limited to the development of substance use disorders apart from alcohol dependence and lost its potency for higher levels of FHD.

Barnes, Reifman, Farrell, and Dintcheff (2000) summarize the literature on parental socialization and child outcomes into two key constructs: parental support (communication that would indicate to the child that they were loved and accepted) and parental control (behaviors intended to promote child behavioral compliance to parental expectations). In a six-wave longitudinal study, the authors found a significant link between parental support and adolescent outcomes. Surprisingly, they found that neither coercive control nor parental inductive control (telling and explaining to adolescents why they should not do something) to be significant predictors of positive child outcomes. Only parental monitoring (e.g., did parents know the whereabouts of their adolescent children) emerged to be a significant predictor of desired child adolescent outcomes. These findings are consistent with Baumrind's (1991) typology, which conceptualizes authoritative parenting as those parents who combine boundary setting (monitoring) with responsiveness (support).

The implication of these studies is that family attentiveness does serve as a context for gaining insight into the onset of adolescent substance abuse. Following Bronfenbrenner's bio-ecological model (1994), parental style and practices interact with individual characteristics to create a willingness on the part of the child to be socialized, and this willingness is predictive of behavioral outcomes (Darling & Steinberg, 1993).

Peers as a Context

Developing a network of friends is an important part of early adolescence (Ianotti, Bush, & Weinfurt, 1996). Adolescent prosocial development, (Simmons & Blyth, 1987), and moral development (Schonert-Reichl, 1999) are both influenced by peer reinforcement. Carlo, Fabes, Laible, and Kupanoff (1999) suggest a unique influence

from peer interaction that does not exist in adult-adolescent interaction due to the more equal status between peers. They observed that peers reciprocate peer prosocial behaviors, such that cycles of prosocial behavior are formed.

Peer influences have traditionally been a robust predictor of adolescent substance abuse (Bauman & Ennett, 1994; Hawkins, et al., 1992). Research has provided support for at least two theories to explain the relationship between peer influences and substance use: Individual Characteristics Model, and the Peer Influence Model (Curran, Stice, & Chassin, 1997; Vitaro, Tremblay, Kerr, Pagani, & Bukowski, 1997; Wills & Cleary, 1999). In the former, adolescents involved in delinquent behavior select friends who are also involved in deviant behavior. This conforms to the adage "birds of a feather flock together" and precludes the idea of an individual being corrupted by hanging around the "wrong" crowd. In the second view, deviant friends influence a new group member to adopt delinquent behavior through peer pressure. That is a young person who is not involved in delinquent behavior is influenced to adopt this behavior due to his association with the group.

Hussong (2002) examined adolescent peer interaction along three dimensions predicting adolescent substance use: best friendships, peer cliques, and social crowds. She found that the strongest of the three dimensions was the extent of substance use by the adolescent's best friend. However, the dimensions had an additive effect such that youth who were more embedded in peer contexts were more likely to use substances themselves.

Steinberg, Darling, and Fletcher (1995) found that peer groups exert an influence on school achievement above and beyond that of the family. Parents were found to have

the most important influence on a youth's long-term educational plans, but peers influenced more powerfully their day-to-day activities in school (e.g., how much time spent on homework, level of enjoyment of school, etc.). They found that an important predictor of academic success is the level of agreement in values between an adolescent's family and peer group. Other researchers have also found a relationship between school performance and risk of substance-using behaviors (Resnick, Bearman, Blum, Bauman, Harris, et al., 1997). Thus, it would appear that peer relationships are an important variable in understanding the etiology of adolescent substance use. Later in this section, the intersection between the microsystems and how they affect adolescent substance abuse is discussed.

Schools as a Context

Contrary to popular belief, research seems to support a general trend toward increased prosocial behavior among children as they get older (Fabes, Carlo, Kupanoff, & Laible, 1999). However, early adolescence is a time of rapid, and sometimes difficult physical, cognitive, and psychosocial maturation, which many individuals have difficulties navigating (Carlo et al., 1999). For example, middle school was conceived as a means of making the transition into secondary education less turbulent (Simons-Morton et al., 1999); but, early adolescents can have a particularly difficult experience moving into a new academic environment, and their prosocial development may be hindered in the face of multiple changes (Eccles, Lord, & Midgley, 1991).

Johnston et al. (1994) describe a sizeable increase in problem behaviors during the transition into adolescence. For example, they report that prior to middle school less than 10% of sixth graders have used tobacco and 5% have used alcohol. However, by the

eighth grade the figures jump to 30% and 70% respectively. Simons and Blyth (1987) found that the number of life transitions is negatively correlated with grades and participation in extracurricular activities for both boys and girls, and with self-esteem for girls. Negative motivational and behavioral characteristics are also associated with early adolescent transitions (Eccles, Lord, & Midgley, 1991).

Hirschi's (1969) seminal work in social bonding theory posits that attachment to socially conforming institutions such as the school provides a protective function against deviant peer groups. He identified four elements of social bonding that if present would deter deviant or delinquent behavior: attachment, commitment, involvement, and belief. When youth have an attachment to a prosocial institution they are more able to refuse to engage in deviant and delinquent behavior. Commitment refers to the personal time and energy invested in the institution, and more investment leads the youth to uphold the institution's norms and ideals. Involvement deals with literal hours in the day; the more time spent in institutional activities the greater the attachment. Finally, belief refers to the extent that the youth agrees with the legitimacy of the institution's values and norms. The more agreement, the more likely the youth will be to internalize these beliefs and engage in them as a personal choice.

Subsequent research has found that a positive affiliation toward school may serve a protective function against many antisocial behaviors (Hill & Werner, 2006). School attachment has been defined in the literature as a sense of affection toward and enjoyment of school (Hill & Werner, 2006) or as a basic expression of the human need to fit in (Anderman, 2002), and is associated with positive outcomes such as school completion and success (Marcus & Sanders-Reio, 2001). Low school attachment, on the other hand,

is associated with negative outcomes such as aggressive behavior, delinquency (Griffin, Botvin, Scheier, Doyle, & Williams, 2003), and substance abuse (Murguia, Zeng-yin, & Kaplan, 1998; Najaka, 2001). The effects of school attachment on adolescent behavior have been found to be similarly correlated in other cultures (Junger & Marshall, 1997).

Schools do not only effect the developing youth directly through the creation of a personal bond. Rather, Petronis and Anthony (2003) argue that there is a "contagion effect" related to how contextual influences can explain geographic concentrations of drug use in a certain school when compared to another. According to the contagion model, students within schools develop similar substance use habits through social interactions with other peers (Murray & Hannan, 1990). A school climate of norms and attitudes toward drug use may be transmitted from peer to peer so to encourage or dissuade substance use making varying substance abuse rates noticeable across schools (Kumar, O'Malley, Johnston, Schulenberg, & Bachman, 2002). For example, Henry and Slater (2007) found that regardless of a student's personal level of school attachment, students who attend schools where the pupils overall tend to be well attached are less likely to use alcohol. Other researchers have found that a sense of community in the classroom and school enhances prosocial development (Solomon, Battistich, Watson, Schaps, & Lewis, 2000).

However, the contagion model is insufficient in and of itself to explain all of the variance between schools since it must assume some initial across school variability in attitudes toward drugs to which other students are exposed. Therefore, a second explanation is that significant sociodemographic characteristics of the school or in the neighborhood in which the school is nested are operating to influence the onset of

youthful substance use (Ennet, et al., 1997). Studies show that adolescent problem behaviors such as rates of delinquency, teenage pregnancy, substance abuse, and low education are higher in disorganized and impoverished schools and neighborhoods (e.g., Furstenberg, 1994; Hawkins, Catalano, & Miller, 1992).

Together these studies emphasize the importance of looking at individual characteristics as well as the the effect of family, peers, and schools at the individual level as a microsystem influence. However, these studies also present a second level contextual effect, more akin to an exosystem influence. This section now turns to the interaction of microsystem influences on adolescent substance use.

Mesosystem Influence on the Development of Substance Use in the U.S.

Family-Peer-School Interactions

Griffin, et al. (2003) suggest that parents influence their child's peer network through the formation of conventional values in their adolescent. These youth then go on to seek out friends who hold similar values. Patterson and colleagues similarly suggest that the patterns formed in parent-child interactions are replicated in other settings such as school and the peer group, which in turn become self-reinforcing (Dishion, Patterson, Stoolmiller, & Skinner, 1991). This coincides with Steinberg and associates' (1995) findings that parents are the most salient influence on their children's long-term educational goals, but that peers are a more persuasive influence on the day-to-day activities that directly affect adolescent school performance. Interestingly, they also found this relationship was moderated by ethnicity with minority students relatively more influenced by their peers than European-American youth. Due to the segregated nature of

schools, minority youth find their choices of peer groups to be restricted. For example, Asian-American youngsters reported the highest level of peer support for academic achievement but the lowest levels of parental involvement in school related activities. In contrast, African-American parents score among the highest in regards to parental involvement in their child's school, but African-American youth find it difficult to gain membership into the "brains" peer group. Therefore, the negative effects of a lack of parental involvement for Asian-American students was offset by the homogenizing influence of their peer group, and for African-American students, the positive benefits of supportive parents was offset by a lack of support from their peer network. Thus at the mesosystem level (intersection of the family and peer microsystems) the macrosystemic influence of a culture that promotes segregation was a moderating factor.

In similar vein, Eccles and colleagues (1993) suggest that parenting styles that tend to be more authoritarian and that are unresponsive to adolescents' developmental needs for increases in autonomy may amplify the risk for adolescent substance use in part due to a decrease in school attachment. Lagerway and Phillips (2003), in a study on Latinos, comment that student success was related to parent's encouragement to do well in an effort to combat racial stereotyping. Other researchers found that school attachment differed among racial groups (Johnson, Crosnoe, & Elder, 2001) and that student's perception of discrimination on the part of teachers and administrators created institutional barriers that affected levels of school attachment (Conchas, 2001; Martinez, DeGarmo, & Eddy, 2004). Peer selection, likewise, is associated with school attachment with members of deviant peer groups being more likely to have lower levels of school performance and to drop out (Carlo et al., 1999).

In a study of contextual interactions between neighborhoods, families, peers, and schools, Cook, Herman, Phillips, and Settersten (2002) found that there was no one context that stood out, but that each context had an independent and modest effect on adolescent outcomes. They concluded that contexts do matter, but that their effect is additive instead of nonlinear. In the aggregate, the quality of a school reflected the quality of the neighborhood, homes, and peer groups with the reverse being equally true. Therefore, when a context was positive it tended to protect the youth, and when it was negative it placed the youth at greater risk. Cumulatively, more negative contexts spelled greater risk for poor outcomes.

Taken together these studies underline how the interaction between different microsystems influences the development of substance use in adolescence. There is also a need for more research into how individual characteristics like race, or a specific genetic marker may be conceptualized as sources of variation that influence the person's susceptibility to the developmental effects of proximal processes that operate within the clustering effects of a context.

Exosystem Influence on the Development of Substance Abuse in the U.S.

Neighborhood as a Context for Family and Peer Interaction

Few studies have systematically examined neighborhood influences on substance abuse problems (Duncan, Duncan, & Strycker, 2002). Systemic theory suggests that when members of a community form local social ties, their ability for community social control is augmented (Sampson, 1988). Sampson, Raudenbush, and Earls (1997) testing this theory found that a latent construct of collective efficacy defined as a willingness to

intervene on behalf of the common good and a neighborhood sense of cohesion and trust, exerted a substantial effect on multiple measures of violence in disadvantaged neighborhoods. Duncan et al., (2002) found a negative relationship between levels of social cohesion and perceived problem with youth alcohol and drug use in the neighborhood. Moreover, they report that the interclass correlations for perceived social cohesion lend credibility for looking at drug and alcohol problems among youth at the neighborhood and individual levels of analysis. Nash and Bowen (1999) did not measure actual neighborhood crime rates or social control but only the adolescent's perception of each. They found that adolescent's perception of neighborhood crime served as a risk factor and their perception of neighborhood informal social control acted as a protective function for their own prosocial behavior.

In a different approach, Fletcher and colleagues (1995) examined the extent that adolescents are influenced by the parenting style of their peer's parents living in the same community independent of the adolescent's own parents parenting style. They found that a preponderance of parental authoritativeness (Baumrind, 1991) in the adolescent's peers is related to a variety of healthy adjustment indicators beyond the contribution made by the adolescent's own parents. The link, however, was not direct, but was indirectly transferred through the peer's choice for non-deviant peers. Surprisingly though, if the friend is already engaged in delinquent activities, the prevalence of authoritativeness among the friends' parents directly reduces delinquent behavior. Thus, it seems that the influence of multiple authoritative parents in a neighborhood creates a community-wide impact against delinquent behavior (Sampson & Groves, 1989).

As pointed out by Steinberg et al. (1995), the norms and parental monitoring that influence adolescent development are most effective when there is an overlapping of adult and youth social networks. That is, parents not only know their children's friends, but also the parents of their children's friends. Furstenberg (2005) echoed these findings and asserted that parental efforts to rear children are more successful when they reside in communities that have a high consensus and intergenerational closure (overlapping social networks between parents and children) in regards to child rearing. However, while socially integrated parents are generally more successful in their child rearing attempts Steinberg et al. (1995) point out an important caveat:

> Although we tend to think of social integration as a desirable endpoint, its desirability depends on the nature of the people that integration brings one into contact with. There are many communities in contemporary America in which it may be more adaptive for parents to be socially isolated than socially integrated. Indeed, some of Furstenberg's (1990) recent work on family life in the inner city of Philadelphia suggests that social isolation is often deliberately practiced as an adaptive strategy by many parents living in dangerous neighborhoods (p. 459).

Macrosystem Influences on the Development of Substance Use: The Case for International Research

Research that remains culture-bound is at odds with the goal of scientific investigation–generalizability. Much has been written regarding the need for cultural adaptations of extant prevention and treatment models for the diverse ethnic groups

residing within the United States (e.g., Castro, Barrera, & Martinez, 2004; Resnicow, Soler, Ahluwalia, Braithwaite, & Butler,2000; Turner, Wieling, & Allen, 2004). While the need to tailor substance use prevention and treatment programs to the social characteristics of the target population is clear, how to ascertain the pertinent characteristics of a given culture is considerably murkier. Resnicow, et al. (2000) describe two levels of cultural sensitivity that should be considered: surface structure, which involves matching intervention materials and messages to observable, "superficial" characteristics of a target population, and "deep structure," which involves incorporating the cultural, social, historical, environmental, and psychological forces that influence the target health behavior in the proposed target population. It is this "deep structure" that will be considered in what follows.

Cultural values and beliefs refer to the implicitly or explicitly expressed ideas regarding what is good, right, and desirable in a society and on which the specific norms for appropriate behavior are founded in a given group of individuals (Schwartz, 1999). Bronfenbrenner cited by Luscher (1995) lays out a proposition detailing the effects of the interaction between culture and proximal processes in human development:

> Major determinants of the contents and effects of proximal processes are systems of belief and knowledge about human development and how it takes place. These systems exist on three levels. From a developmental perspective, they originate in the broader sociocultural and institutional structures of the larger society, both formal and informal. These systems of belief and knowledge are then transmitted, through a variety of pathways, into the more immediate settings of family, school, peer group

> and workplace, where they exert their direct effects on proximal processes. Finally, through the operation of these processes over an extended period of time, systems of belief are internalized and become characteristics of the developing person, and, as such, influence the course of that person's subsequent development (p. 573).

Accordingly, knowledge and beliefs are seen as cultural phenomena (or as Luscher suggests, the culture itself) that are transferred from generation to generation through reciprocal interaction in the immediate environment. Once ingrained in the society these beliefs form the macrosystem influence on the developing person (Bronfenbrenner, 1979). Inherent in Bronfenbrenner's macrosystemic influence is the recognition of the heterogeneity that resides within any culture as well as the influence of culture being anchored in the context of a historic period in time. That is, the traits of the individual (genotype) interact with the microsystem, mesosystem, exosystem, macrosystem, and chronosystem to produce a developmental outcome (phenotype).

Schwartz (1999) in a theory of cultural values proposed seven types of values on which cultures can be compared by considering three dimensions that he proposes confront all societies. The first cultural dimension is *Conservatism* vs. *Autonomy.* Conservatism describes cultures in which the person is viewed as entity embedded in the collectivity and finds meaning in life through social relationships and participating in a shared way of life. Autonomy is subdivided into *Intellectual Autonomy* and *Affective Autonomy,* and describes cultural emphasis on the desirability of individuals independently pursuing their own ideas (curiosity, broadmindedness, creativity) and affectively positive experience (pleasure, exciting life, varied life) respectively. A second

dimension is *Hierarchy vs. Egalitarianism.* Hierarchy describes a cultural emphasis on the legitimacy of an unequal distribution of power, roles and resources (social power, authority, humility, wealth). Egalitarianism, on the other hand, describes a cultural emphasis on transcendence of selfish interests in favor of voluntary commitment to promoting the welfare of others (equality, social justice, freedom, responsibility, honesty). The third dimension speaks to the relation of humankind to the natural and social world expressed by *Master vs. Harmony.* Mastery describes a cultural emphasis on getting ahead through assertive behavior (ambition, success, daring, competence). Harmony describes a cultural emphasis on fitting harmoniously into the environment (unity with nature, protecting the environment, world of beauty).

Schwartz (1999) in a test of his theory surveyed 49 nations of the world. Included in his survey were three Latin American countries: Mexico, Brazil, and Venezuela. The results place all three Latin American countries very close to the intersection of the three dimensions (i.e., the world average on all values). In his report, Schwartz did not offer an interpretation of the findings for the Latin American countries; however, two equally plausible interpretations would seem to fit the data. First would be to infer values that could be considered the mid-point of the dimensions such as an avoidance of extreme positions, valuing relative flexibility, being more present oriented, and spontaneous. A second and perhaps more conservative position might be to assume considerable within group cultural heterogeneity among the three countries such that they effectively canceled each other out and regressed toward the mean.

Venezuela as a Context

Venezuela is a very diverse society. Historically, around the time of the Second World War Venezuela became an extremely attractive destination for immigrants from around the world. The mild climate, beautiful scenery, and petroleum rich land created an appealing environment for many. Among others, large immigrations from Italy, Germany, Spain, Portugal, China, Israel, Argentina, Chile, and Columbia came looking to make their fortunes, and many did. From the 1960s until the beginning of the 1980s it was not unusual for middle-class Venezuelans to take weekend shopping trips to Houston or Miami and to send their children to study in Europe or the United States. They were given the nickname "Dame Dos" among store patrons, which means "give me two," from their practice of saying, "Oh that's cheap, give me two." Politically, Venezuela has traditionally been a social democracy run by two primary parties, but with smaller more radical groups having a noticeable influence. Economically, the country has operated under a quasi free enterprise system. In the early 1970s, the government nationalized oil production and set price controls on most products and created a national health care system for the poor. Property rights were fiercely protected, but the poor were allowed, "squatters rights" on government land. In the 1990s after more than a decade of low oil prices, the International Monetary Fund intervened to *encourage* a more free-market economy and divestment of government owned enterprises in the face of an escalating national debt. The government, at that time, owned the largest bank in the country, the only international airline, the telephone, water, and energy companies amid others. The economic turmoil was not without its social unrest. Numerous strikes, protests, and riots plagued the country throughout the 1990s. Populist movements began to gain adherents,

and the country suffered an attempted coup d'État that ultimately ended with the president being impeached.

The military leader of the failed coup, after receiving a presidential pardon that released him and his compatriots from prison, formed a political party that won the 1998 elections. The Hugo Chavez administration began to undo much of what the International Monetary Fund had imposed. The country began to move once again toward what some have described as a more collectivistic and hierarchical orientation (Hofstede, 2001; Triandis, 1995).

The Qualitative Case of Venezuela

Culture joins with social structure, history, demography, and ecology in complex reciprocal relations that influence every aspect of how we live (Schwartz, 2006). Still, measuring culture can be difficult. Schwartz and other cultural theorists (Schwartz, 2006) look at children's stories, at the systems of law, at the ways economic exchange is organized, or at socialization practices to reveal the cultural orientations in a society. When researchers try to identify culture by studying the literature of a society or its legal, economic, family, or governing systems, what they seek, are underlying values (Schwartz, 2006).

A pre-dissertation fellowship provided by the MSU International Studies Program, allowed the author to travel to Caracas, Venezuela in the summer of 2006 to collect pre-research data in the form of interviews and focus groups. In an attempt to gain a better understanding of the characteristics of low-income families in Venezuela and their effect on the development of adolescent substance abuse, five ethnographic records

were developed from focus groups with high school teachers (2 groups), low-income parents of adolescents (2 groups), and psychotherapists (1 group) who work with youth and families. The preliminary findings suggest several areas of fruitful investigation.

First, there seems to have occurred an important shift in cultural values regarding parenting in Venezuela. All five focus groups concurred that a determining factor in the onset of adolescent substance abuse in Venezuela has been an increase in parental permissiveness expressed through a lack of parental monitoring and consistent discipline. In one group of parents comprised exclusively of mothers of adolescents, the participants conveyed that they had been reared in strict homes with rigid boundaries, but that they were much more permissive with their own children. The observations of these mothers are particularly important since Venezuela has been described as a "matrifocal" society (Recagno-Puente, 1998). Particularly in lower income families, the conjugal system is unstable, fathers are peripheral, and mothers are venerated which leaves the mother, aunt, or grandmother as the affective and organizational center of the family (Lodo-Platone, 2004). In part, this shift may be attributed to recent swells of women in the workplace. As a result of the declining economy, increasingly more women have left their traditional roles as homemakers to aid in the family's finances. Older siblings, grandmothers, aunts, and neighbors often form networks of extended kin in order to attend to younger children.

One Venezuelan researcher (Lodo-Platone, 2004) in a qualitative study of familial organization in low-income communities looked at five aspects of family organization: (a) daily problem solving, (b) family communication, (c) behavioral patterns in the designation of responsibilities with the household, (d) authority, supervision and control standards, and (e) affective relationships and the reciprocal expressions of feelings. Her

findings regarding the prevalent patterns of family functioning under these five categories are described below along with the corresponding findings from focus groups conducted by the author.

First, daily problem solving is characterized by very little planning to avoid possible problems. The lack of resources often makes it difficult for families to plan effectively for the future. Problems tend to be dealt with as they occur and solutions are improvised on the spur of the moment. In the author's own research a fatalistic mentality was found among the poor in Venezuela that often leads them to an "eat drink and be merry, for tomorrow we may die" view of the world. This perception of the efficacy of human deliberation and actions has important implications for the implementation of parenting and other programs that rely upon coaching individuals to be more purposeful in their interactions.

Second, communication patterns tend to center around the events of the day. Lodo-Platone proposes that discussion about shared problems is avoided due to inadequate communication skills, which lead to poor results. The families that were interviewed by the author spoke of having to leave their homes often between 5:30 and 6:00 in the morning in order to avoid the long lines that form for transportation out of the neighborhood. Then after a full day at work, they battled in long lines and overcrowded buses to return home again. Time at home in the evening was occupied in the daily chores and in preparation for the next day of work. Therefore, it is not surprising that members would avoid the more intense forms of communication and prefer to watch television and relax in any free time that they may have. Additionally, housing layouts often do not provide for private areas that would lend themselves to deeper forms of

communication. Participants in my focus groups conveyed that poorer families are frequently limited to renting a single room in which all home interaction takes place. Implementation of programs that help families learn communication skills must be sensitive to the physical and time constraints on these families.

Third, there are few routine behavioral patterns related to the designation of responsibilities within the household. Members show great flexibility in performing different roles and functions in order to maintain system stability. This is especially true in regards to childcare and protection. However, Lodo-Platone was not specific if this referred to males and females, or only females.

Fourth, the mother tends to be the authority figure in the household. However, due to her time spent at work, any adult or older sibling may exercise control or supervisory functions over the younger children. This often results in little consistency in discipline or the expectation of appropriate behavior. The participants that I interviewed echoed this tendency. One mother spoke of her 13 year-old daughter having male friends in her house before she arrived from work. Another spoke of young children playing in the neighborhood streets with no parental supervision. Again, there was an expression of "but what can I do, I have to work, and there is no one to watch them." In Venezuela, one often hears the expression that a child is "hijo de papá y mamá." (son or daughter of father and mother). The expression refers to a "good" child who was properly reared under the supervision and love of a functioning parental system. Poor families have a vision of what a positive environment for children entails, but they frequently struggle to provide it given their financial constraints and the context in which they live.

Fifth, affective relationships and reciprocal expression of feelings tend to be implicit rather than explicit among poor families. Feelings of loyalty to each other were found to be very important. I also found that expressions of love, concern, and respect are paramount to these families. Children are taught from the earliest ages to "pedir la bendición" (ask for the blessing) from any adult relative whenever they enter or leave their presence as a sign of respect. Not doing so in most families would be a message that you are not family to me. The message is also exclusive to family members and would not be extended to a neighbor even if she or he provided a care-giving function. Participants related that the term "respect" is multifaceted and very important in Venezuelan culture and is a strength that future programs that are designed to aide families should incorporate if they hope to be successful.

A second prominent point that emerged from the focus groups was how the inclination toward extended kin networks coupled with the topography of Caracas lead to characteristics of neighborhood development. Participants spoke of neighborhoods that started as "squatters" were often built from extended family networks. As one member of the family managed to get his shanty built, he let his relatives know so that they would come and put up their own shanties beside the original one, or enlarge it. Soon, several small contiguous units would be built in which families would be in close proximity in order to facilitate childcare and share resources. Numeric growth of the family would trigger projects to expand the shanty to accommodate more family members. Men from the family or emerging neighborhood would often band together to help each other build their own ceramic-block houses. With the growth of the neighborhood, expansion of the existing structures was limited to building upward. Amazingly, developed poor

neighborhoods in Caracas are full of three, four, and five storied houses built on 65° (or greater) inclines by men with less than a high school education. Interestingly, Hernández-Ponce and Reimel, (2004) found that quality of life measures among Venezuelan poor were positively related to home ownership, and the adequacy of the home to accommodate family size. It seems that these values held by the Venezuelan poor (i.e., extended kin networks, and home ownership) have interacted to produce densely populated sectors of low-income families that are mainly led by single mothers. As neighborhoods grow, they also form what is called "Associación de Vecinos" or Neighborhood associations. These associations are recognized by Venezuelan law and often determine the disposition of government provided resources (Hernández-Ponce & Reimel, 2004). There is usually no formal means to announce community meetings or decisions besides word-of-mouth. Therefore, as the neighborhood grows, residents living on the outskirts become increasingly disenfranchised and uninvolved in the decision-making process at the community level.

With the growth of the neighborhood also comes delinquency. Pockets form in the neighborhoods where drugs and prostitution are unhindered, and the community cohesions begins to deteriorate. Participants spoke of how drugs are sold in some areas as openly as one would purchase bread and milk. All five groups estimated that 65%-85% of homes in poorer neighborhoods have a member that either consumes or sells illegal drugs. This intersection between family dynamics and neighborhood qualities gives rise to characteristics in the peer structures of the youth that inhabit them.

A third issue from the focus groups was the influence of peer groups. Schoolteachers, parents, and psychotherapists underscored the important influence of

peers on Venezuelan youth. Schools play an important role in the development of peer groups in Venezuela. Public schools are nested in neighborhoods and therefore often reflect the neighborhood in which they exist. Teachers spoke of how dangerous schools are becoming and how they often are afraid to evaluate students negatively for fear of repercussions from a drug-dealing parent or perhaps even the youth themselves. Other focus group members reported that youth in poorer neighborhoods are often recruited by older drug-traffickers because of their relative immunity before the law and their need for income. Apparently these youth are promoted within the drug organization for merit much like a military organization. After a certain "rank" youth are given "command" over a certain number of other youth, and armaments in order to guard drug trafficker's territory. Many families often turn a blind eye to this behavior because the income the youth brings home is needed for their survival. Those youth who become involved in the drug trade generally respect youth and adults who do not. However, this relationship can be tenuous given the immaturity of gun-carrying youth. Still, the majority of violence occurs between the different groups who cross territorial lines and those unfortunate ones that get caught in the crossfire.

Venezuelan youth, despite their precarious situation, do not report neighborhood violence as their primary stressor. A study of 2,121 youth from all social strata of Caracas found that self-reported causes of stress for youth are: 1) Bad grades, 2) My mother becomes sick, 3) Fights within my family, 4) Lies that people tell me, and 5) My brother or sister or another member of my family are harmed by someone. It is interesting to note that the youth, on average, did not list themselves being harmed in the first five positions. It was not until the 6th position that they expressed concern over their own personal well-

being (Dávila & Guarino, 2001). Unfortunately, the study did not provide a demographic breakdown for the sample to know what percentage of the participants came from poorer neighborhoods, which may have elucidated an interesting interaction effect.

Finally, schools were also seen to play an important role in the development of substance-abusing behavior. Both teachers and parents spoke of the lack of parental involvement in children's schooling. Teachers stated that attendance to parent-teacher conferences was usually limited to about 2-5% of the parents. Parents expressed teachers' unwillingness to schedule conferences at times that wouldn't conflict with their work, and that they already knew what they were going to say so "¿pa' que ir?" (why go?). Parents are coerced to attend two annual meetings under threat of non-admittance into the school at the beginning of the school year, or not releasing grades at the end of the school year. Both teachers and parents described the relationship as being adversarial. Lodo-Platone (2004) found similar attitudes on the part of parents she interviewed. She described parental feelings of PTA meetings as "teachers' scoldings that produce mutual distrust." (p. 81).

Lodo-Platone (2004) suggested a dropout rate of approximately 42% from the 1st to the 6th grade. Unfortunately, she did not provide a citation to substantiate her claim. The teachers that I interviewed also expressed concerns over high desertion rates, but placed the highest rates of desertion occurring after 7th grade. In Venezuela students progress from elementary school into high school without the transition of middle school as is common in the U.S. school system. According to teacher reports, there exists a strong school attachment among elementary students, but this attachment wanes after the transition into high school. They attribute this decline to the structure of high school

whose changing class schedule does not permit a bond to develop between the teacher and the student. Also, there is a general lack of extracurricular activities that might allow the adolescent to develop a bond or sense of belonging. Additionally, a majority of schools in Venezuela hire teachers on an hourly basis to teach a given subject, which creates a transitory impermanent culture within a school. Teachers do not form any bond or loyalty to a school and are therefore less inclined to promote a sense of belonging and stability among students. Likewise, students' class schedules are often spotted with inactive hours where they have no scheduled activities or classes to attend. During "down" times students congregate in areas of the building and socialize, or leave the premises to engage in other activities.

The teachers interviewed also reported a sharp increase in student drug use after entrance into high school. If this results to be a general trend, it would seem that in the absence of a secure attachment at home and the loss of attachment to the school, coupled with low parental involvement with school, and low parental monitoring, and low school structure, teens may be left to meet their emotional needs among peers. This scenario, has repeatedly been shown to increase risk of substance-abusing behavior among teens in the U.S. (Bauman & Ennett, 1994; Hawkins, Catalano, & Miller, 1992), and suggests a basis for initial theory development for the onset of substance use among teens in Venezuela.

The Quantitative Case for Venezuela

Limited quantitative research has been conducted in Venezuela regarding substance abuse in general and less yet in regards to adolescent use. One report by the Comisión Nacional Contra El Uso Ilícito de las Drogas [National Commission Against

the Illicit Use of Drugs] (CONACUID, 2006) examined several drug related behaviors of patients in residential treatment programs across the nation of Venezuela. They found that of the 6,374 patients 19.19% are below 20 years of age, 89.93% are male, 75.4% do not have a high school education, 68.95% are single (never married), 57.17% are unemployed, 12.49% are students, and 75.28% entered treatment voluntarily. These patients initiated their substance abuse with Marijuana (36.57%), and Alcohol (30.67%), and then Cocaine (15.05%), tobacco (9.54%), and crack and other drugs (8.06%). Approximately eighty-six percent initiated drug use before their twentieth birthday with a mean age of initiation for Marijuana 15.6, Alcohol 15.1, Cocaine 18.6, Crack 18, and tobacco 13.9. The drug use for which they most frequently sought out treatment was Crack 50.44%, Cocaine 20.03%, Marijuana 13.65%, and Alcohol 6.92%. While the generalizability of this study is limited due to the clinical nature of the sample, the indications are that initiation into substances start in early to mid adolescence, and that Venezuelans begin their use somewhat differently than in the U.S. Studies of substance initiation in the U.S. tend to support a gateway theory with 84.7% of the sample initiating use with tobacco and alcohol and then progressing into marijuana and harder drugs (Golub & Johnson, 2001). Also interesting is the high percentage of individuals seeking treatment for crack and the apparent low occurrence of treatment for alcohol dependence reported in the CONACUID study. Results from the 2004 National Survey on Drug Use & Health (SAMHSA, 2005) state that of the 3.8 million persons who received treatment in the U.S. for alcohol or drugs in the past year, more than half (2.4 million) received treatment for alcohol use during their most recent treatment, 1.0 million persons (26%)

received treatment for marijuana, 884,000 persons (23%) for cocaine, 424,000 persons (11%) for pain relievers, and 283,000 persons (7%) for heroin.

Another study attempted to identify risk factors for licit and illicit drug use in a population of Venezuelan youth between the ages of 12 and 17 in Naguanagua, a small urban population in the north central region of the country (Osorio, Ever, Ortega de Medina, & Pillon, 2004). This study reported that family and mental health factors were high-risk for drug use with severity scores of 80.41% and 63.67% respectively. Recreation, behavior problems, and school adjustment were only moderate-risk with severity scores of 48.98%, 46.73%, 39.39% respectively. Peers and social competencies were found to be low-risk with severity scores of 31.63%, and 31.02% respectively. The overall problem density for substance use was 3.67%.

The Osorio et al, study used 8 of the 10 domains from the Drug Use Screening Inventory (Kirisci, Mezzich, & Tarter, 1995) to assess for problem areas. The problem density (severity) score for each domain on the Drug Use Screening Inventory (DUSI) is obtained by dividing the number of yes endorsements by the number of items. The resulting value, multiplied by 100, yields the problem density score that has a range from 0 to 100% in each of 10 domains. It can be seen, then, that problem density scores are solely descriptive of responses to a given domain. Therefore, without further statistical analysis it is impossible to infer risk for substance abuse from these findings.

This study had several other shortcomings that created difficulties. First, the demographic information reported was limited to number, age, and gender of subjects. Second, there was not a detailed explanation of the instrument used, and thus, how the factors were operationalized for Venezuela. The authors report that the DUSI was

validated for Venezuela, but the reference they provide is not a published work. Third, there was not a description of domain by drug, which might allow a comparison of how the different factors were associated with drug abusing behavior. Fourth, the study gave an indication of the overall severity of drug use, but not which drugs were being abused by adolescents in that area of Venezuela. Fifth, this study was conducted in an area outside the target population for the current study, which limits the generalizability of the findings. Still the study provides an initial look into how these students perceive the situations assessed by the domains of the DUSI.

A third study conducted in Venezuela looked at risk factors for the abuse of alcohol among youth (Navarro & Pontillo, 2002). The study was conducted in the same general location as the previously cited study, north central Venezuela. These authors also used the DUSI to assess for alcohol abuse, however, in addition to the factors cited in the previous study these authors also looked at self-esteem as a correlate to adolescent drug abuse. The findings from this study varied significantly from the previous one. Problem density scores were social competency 72.2%, school adjustment 63.4%, peer relationships 49.9 %, psychiatric/emotional 44.6%, and family 44.3%. Self-esteem was found to be high, with 77% of the sample scoring at this level.

This study shares the same difficulties as those mentioned for the previous study, with one important addition. The original sample was 500 adolescents. However, 199 (39.8%) were excluded from the study. One hundred and seventeen (117) were excluded for their score on the DUSI lying sub-scale, and 82 were excluded for incomplete demographic information or for missing data greater than 20%. The authors make no

attempt to explain how the exclusion of almost 40% of their sample might affect the interpretation of their findings.

A fourth study conducted in Venezuela used an adapted version of the DUSI to measure risk factors for substance abuse among students in the Department of Architecture in the Universidad de Zulia (University of Zulia) in Maracaibo, Venezuela (González, 2005). The author reports that 55% of the students report using legal drugs such as alcohol and tobacco and 2.5% use illicit drugs such as cannabis, cocaine, or heroin. They state that 21.5% of the students use stimulants in order to stay awake to study. However, which stimulants were used and their legal status was not stated. The study indicated that 40.5% of the students stated that their best friend used drugs, but again did not differentiate between legal and illegal.

Besides many of the previously mentioned difficulties, the sample used in this population varies considerably from the population of interest for the proposed research. In Venezuela, public education is theoretically free. That is, there is no matriculation fee, but there is great demand and little supply. For this reason, typically only those people willing or able to pay for their inside connection are admitted. Additionally, supplies that one needs for school and normal living expenses are not provided such that for the poor the struggle is uphill. Therefore, the sample used in this study represents an elite group of young people with characteristics that vary widely from a typical adolescent in Caracas.

A study conducted in neighboring Colombia used an ecological approach to look at frequency of marijuana among adolescents (Brook, Brook, De La Rosa, Duque, Rodriguez, et al., 1998). These authors found support for the domains family, personality, and peers having direct effect on adolescent marijuana use. Interestingly, they found that

the developmental path leading to drug use among Colombian youth is largely similar to that found among White, African-American, and Puerto Rican adolescents living in the United States. Still several cultural differences affecting adolescent substance between the two countries were noted: exposure to violence showed a stronger association with subsequent drug use among Colombian youth, there is greater drug availability in Colombia, the impact of the peer group on the youngster's behavior in Colombia is more pronounced than in the United States, and both familialismo and religion, had a stronger protective function against drug use in Colombia than in the United States.

Estimates of adolescent tobacco use from the Global Youth Tobacco Survey (GYTS) ranged a great deal among Latin American countries (Martin, & Peruga, 2002). The highest estimates of the cumulative incidence of youth who had ever smoked tobacco in Latin America were in Chile, and ranged from 68% in the city of Valparaiso to 72% in the city of Santiago. In Uruguay, estimates ranged from 39% in the city of Colonia to as high as 57% in the city of Montevideo. In the city of Buenos Aires, Argentina, 55% of youth had sampled tobacco. In Peru, estimates ranged from 46% in the city of Trujillo to 55% in the city of Lima. In Bolivia, estimates ranged from 54% in the city of Santa Cruz to 50% in the city of Cochabamba. Lower estimates were found in Venezuela (22%) and in Cuba (34%).

A cross-country comparison study of adolescent substance abuse in seven Central American countries and the Dominican Republic, known as the PACARDO project, also found considerable between country variability in patterns of drug use (Dormitzer, et al., 2004). For example, the odds ratio estimate for alcohol use in the Dominican Republic using Guatemala as a reference was 15.9. Additionally, these researchers found that

estimates of school-level clustering indicated that alcohol use clusters non-randomly within schools in all of the PACARDO countries.

Conclusion

Ecological theory has been presented as a frame through which the interaction between differing contexts can be tested to show how risk and protective factors might be used as the basis of a program to deter adolescent substance abuse. The primary contexts that have emerged from the literature are the family, peers, school, and neighborhood. The current study explored risk and protective factors related to adolescent substance use in Caracas, Venezuela. International studies such as the current one, stand poised to shed light on important areas of interest in the struggle to create more healthy environments for the development of future generations. Questions such as how poverty and other variables affect families across cultures in relation to drug abuse, or what differences government policy makes in families' ability to protect their children from the onset of drug abuse are important in an eco-developmental family therapy approach. Additionally, discoveries regarding the risk and protective factors of adolescent substance abuse in Venezuela constitute important advances for the citizens of Venezuela.

Little research has been conducted on drug abuse in Venezuela and less yet on adolescent populations (personal communication with Elvia Rincón director of research for the Oficinal Nacional Antidroga – National Office Against Drugs – July, 2006). Currently, family therapists are being trained and are practicing their profession in Venezuela. However, without serious research on the characteristics of the Venezuelan

population, therapists are left to adapt empirically the theories and techniques of their trade (Feldman, 1989).

Research done in the U.S. and other countries suggest that family attentiveness, externalizing behavior, peer relationships, and school environment are four primary variables that might begin to explain considerable variability in age of onset of substance use among adolescents in Caracas. However, the between-country variability among Latin American countries found in the GTYS and PACARDO studies underscores the importance of a solid research base that serves to identify prevalence of substance use, clustering patterns by contexts or demographic variables, and risk and protective factors of each country. Assuming a homogeneous population due to a common language or any other single characteristic runs the risk of missing the mark and thus wasting precious resources and time. More research is needed to determine the patterns of substance abuse among Venezuelan youth. What drugs are used, the progression of use, contexts surrounding use, demographic characteristics that vary with use, and interpersonal factors associated with drug use are largely unknown, but essential to the identification of risk and protective factors that will inform the development of prevention and treatment interventions.

CHAPTER III: METHODOLOGY

This chapter provides an in-depth description of the procedures employed in the study. First, the setting of the study, data collection procedures including comments on human subjects protocols, and a description of the participants are presented. Second, conceptual and operational definitions of the variables studied are defined. Third, an overview of the data analytic plan and specific hypotheses to be tested are stated.

Setting

Caracas Venezuela is an urban metropolis on the northern coast of the South American continent. The greater metropolitan area is densely populated with approximately five million inhabitants. There are eight school districts in the metropolitan area and approximately 3,000 schools. Approximately one-third (1,000) of those are secondary schools. Caracas has developed such that pockets of poor and affluent neighborhoods are present within each school district. However, it is assumed that some districts (i.e., those on the east side of the city) will have a higher concentration of affluence than others. Unlike U.S. public schools, public schools in Caracas are populated almost exclusively with children from low to lower middle-class families and some private schools are considered missions that reach out to the poorer segments of society. For example, *Colegios Fe y Alegria,* (Faith and Happiness Schools) are Catholic missions that are subsidized by the government and serve primarily the lower classes. Caraqueños (people from the city of Caracas) are ethnically very heterogeneous with little acknowledged racial discrimination. In this study, race will be defined by skin tone

categorized roughly by dark, medium, light, and indigenous. Discrimination by social class is much more prevalent and is acknowledged publicly. Socioeconomic status will be determined by the caretaker's education level, type of neighborhood of residence, number of vehicles owned by immediate family, and number of bedrooms in the home.

Methods

Sampling Procedures

Given the exploratory nature of this study, the availability of funding, and the purpose of the study being to collect pilot data, two school districts geographically proximal from the western portion of the city of Caracas were selected from which to draw a sample of 15 schools. First, schools were stratified in each district by grades taught (i.e. 7^{th} through 11^{th}), with only those containing the target population of children ages 11-18 being selected. Next, schools were stratified by funding type (i.e., private or public). Approximately 40% of schools in these districts are private. However, in order to maintain comparable group sizes, private schools with average class sizes of less than 20 students per classroom were eliminated from the sampling frame. All public high schools had classroom sizes in excess of 20 students per classroom and were, therefore, retained in the sampling frame. In order to ensure that the sample reflects the population with respect to the stratification variable, a proportional allocation procedure of private to public schools was performed. The procedure resulted in six private schools and nine public schools to be randomly sampled from the pool of schools. During the data collection phase of the study one public school was excluded due to logistical concerns. However, given the late stage in the study that the school was dropped it was impossible

to replace the school leaving a total of six private schools and eight public schools. Each school had multiple sections for each of the five grades. Therefore, the section to be sampled was selected randomly from the pool of sections at each grade level. The total population of students present the day of study within each classroom was sampled.

Since districts included in the sample were not randomly selected, a selection bias may have been introduced into the sample. Caracas is a very diverse city, and Venezuela is even more so with geographical and cultural variants that hold the potential to influence participant responses. Moreover, the sample was also limited to school-attending youth and cannot be generalized to those who have dropped out, or never attended. Inferences about adolescent drug use are, therefore, considered generalizable only to the school districts sampled.

Data Collection

Data collection at each school followed a protocol developed by the researcher in collaboration with sources in Venezuela familiar with the education system in that country. Administrative authorizations were sought and received the previous year (2006) during a plausibility study. The first step in protocol was a visit with principals of schools to explain the study, present them with the appropriate authorizations from the Regional Director and the District Superintendent (authorizations from the regional director and district superintendents were obtained during the summer of 2006 during a feasibility study funded by a pre-dissertation fellowship), ask for their participation, and select the classrooms to be sampled. A second visit to the school was made to meet with each teacher to explain to them the study and to leave with them the Parental Informed

Consent forms to be sent to the parents of each child in the classroom to be sampled. Additionally, during the second visit the school principal was given five packets, each of which contained a UCRIHS approved informed consent form and a copy of the MAMBI to be filled out by administrators or teachers in the school and collected at the time of the youth assessment.

A research team of five high school teachers (lead assessors) and five university students (assistants) was recruited to assist in data collection. The members of the research team participated in a 6-hour training session directed by the primary investigator two days prior to the commencement of data collection.

Within each designated classroom, the lead assessor and assistant followed the three-part assessment protocol designed to improve quality and accuracy of the study, and to decrease missing values. For the first part, the school principal accompanied the assessors and their assistants to the classroom and introduced them to the teacher and youths seated in the classroom. The school principal then left the classroom in charge of the team's lead assessor.

Within the classroom, the lead assessor's first tasks were to describe the survey and to establish trust and rapport, prior to distribution questionnaires. This first part of the assessment protocol was structured in a manner that encouraged youth to voice concerns about the anonymity of the study data; the idea was that these concerns should be made public and discussed with resolution in the form of increased trust and rapport. The accuracy and completeness of self-report youth survey data depend upon youth being confident that their answers are anonymous. The lead assessor and the assistant distributed a formal youth assent form, pre-scripted with IRB-approved sentences to elicit

assent. The youth assent form was read to youth pausing for questions or comments after each section of the form. Next, youth were asked to return the IRB-approved Informed Parental Consent forms that were designed both to inform the legal guardian of the child regarding the study and to elicit the guardian's consent for their child's participation in the study. Youth whose parents objected to their participation were identified. Additionally, youth were asked if their parents had expressed a desire for them not to participate, but had not returned the form. At this moment youth who were not participating in the study because of parental objection, or simply because they chose not to participate, left the classroom along with the teacher and assistant assessor. The assistant assessor left with the teacher and children to help ensure the children made it to the pre-designated area during the assessment and to provide the teacher with instructions about completion of standardized ratings (described below); once the teacher started to make these ratings, the assistant returned to aide the lead assessor in the classroom.

After working through issues of trust and rapport the second part of the protocol involved the actual assessment. First, the lead assessor walked through the classroom and distributed a stack of anonymous pre-printed questionnaire forms, a blank Scantron answer sheet, and survey pencils. Youth were instructed not to put their names on any part of the forms. Since many youth were not familiar with Scantron answer sheets, the lead assessor instructed the youth to fill out the name section of the form with the school name. This served as a practice so that youth became familiar with the data collection technique before actually responding to the survey. Next, youth were invited to pick randomly from a small container a pre-printed 5-digit number. The first two digits of the number identified school. The next digit identified the classroom (i.e., grades 7-11). The

last two digits (01-60) distinguished between cases. Allowing the students to select randomly a number that would identify their responses ensured that their anonymity was safeguarded. The youth were then instructed to record their number on the Scantron answer sheet in the area marked "PID" and to record it on the section five answer sheet.

The PACARDO-V was subdivided into five sections in order to create natural breaks for students to rest, and to catch any mistakes and correct them before they became too egregious. The lead assessor secured youth attention and began reading the questions out loud. By reading the questions, the lead assessor was able to find a pace that was comfortable for the students. As the assessor read each question, the students followed along and marked their own answers on the Scantron sheet. The assistant, after giving instructions to the teacher returned to the classroom to help ensure that privacy was respected and order was maintained (e.g., by providing quiet answers to idiosyncratic questions from individual students). This approach was designed to overcome inter-individual variations in literacy, and was intended to reduce what sometimes occurs as 'racing' to the end of a self-administered questionnaire and resultant marking errors. Reading the questions at a rapid but comfortable pace also helped to increase privacy and reduce disruptions by helping the students stay on task. The survey lasted approximately 55 minutes from start to finish.

Section five of the PACARDO-V assessed for age of first opportunity for substance use and for actual age of first substance use. Given the nature of the responses (i.e., numeric ages) and difficulty involved in recording these ages on the Scantron, youth were instructed to record their responses to section five on the survey form. Youth responses were later transferred from the section five form to the Scantron answer sheet

by the research team using a 100% verification procedure (i.e. after being transferred from one format to the next, each section five form and its respective Scantron was checked again by a member of the research team for accuracy).

The construct domains relevant to this dissertation covered in the 112-item questionnaire are described in detail below along with their corresponding items. Section 1 of the questionnaire assessed for demographic data. Section 2 assessed for questions regarding relationships with parents, friends, school, neighborhood, and general social adaptation. Section 3 assessed for the youths perception of the relative risk (physical or otherwise) of consuming drugs, and the degree perceived accessibility of different drugs. Section 4 assessed the frequency in which youth are involved in different activities. It is in section 4, item 81 that youth are first asked directly about their own consumption of a particular drug. This strategy was implemented with the expectation that youth who are now familiar with the format of the questionnaire would be more apt to respond truthfully. Section 5 assessed age of first opportunity for substance use and age when a substance was first used.

The third part of the protocol was the closing session, during which the assessors collected the completed questionnaires in a manner that reduced data collection errors and helped promote a sense of anonymity. In specific, youth were asked to place their Scantron answer sheet on top of the Section 5 sheet and hand them directly to the lead assessor or the assistant as they passed through the room. While collecting the answer sheets the assessors verified that the ID numbers were correctly filled out and were present on both sheets before placing them in a large envelope. The assessors sealed and packed away the envelope before engaging in closing exercises that included collecting

the PACARDO-V, expressing gratitude and hope that the youths would agree to participate in future assessments of this type. Youths were given a ballpoint pen with the logo of Michigan State University as a token of appreciation for their participation. Additionally, a new laser printer was donated to the school as a sign of appreciation for the participation of students, teachers, and administrators.

Data Processing and Quality Control

After data collection, all survey data from section 5 that reported on the youth age at first use of a substance were transferred to Scantron answer sheets with 100% verification. Each Scantron answer sheet was checked for accuracy, and cleaned of any stray marks that might have influenced the precision of the scanning machines. The answer sheets were then scanned into a database by the MSU scoring office.

Human Subjects Protections

The researcher obtained permission from the Regional Director of the Federal District of Caracas and the corresponding superintendents of the two school districts that were sampled as well as a letter of collaboration from the principal of each of the schools sampled. Additionally a letter of support was received by the Universidad Simon Rodriguez (the only Venezuelan university that has a post graduate degree in substance abuse). Permission to conduct the study was received from the Michigan State University Committee on Research Involving Human Subjects (UCRIHS, IRB# 07-320). A copy of the IRB approval letter along with approved consent forms has been provided in Appendix D. A Copy of the letters from Venezuelan authorities may be found in

Appendix E with the exception of the letters from the principals of the 14 schools, in which case only one example is provided.

The MSU IRB approved a waiver of parental consent protocol, which involved contact with parents via a letter from the primary researcher sent home in the days prior to the assessment session. This letter explained purposes and contents of the survey, and requested the parent/guardian to return the form expressing their desire in regards to their child's participation in the study. The parent/guardian was also informed that in the event that they did not return the form, their child would be allowed to participate if she/he chose to do so, and that the school principal would act as an advocate for their child. A total of 24 parents/guardians requested that their child not participate in the study representing approximately 1% of the parents contacted. A total 189 of the parents returned the forms at all representing approximately 8.5% of the total population contacted.

During the assessment session, even if a child's guardian had consented to allow them to participate, an active assent process was in place. That is, youths could decline to answer any and all questions if they did not wish to participate, or they could mark a "no response" option on the survey form. In actual practice, non-participation in this form was atypical: no students left all items blank and only three students marked more than 50% of the survey item responses as "no response."

Study Participants

A total of 1,831 students ages 11-19 were surveyed from 14 schools in two districts from the western part of Caracas, Venezuela. Questions on the first use of a fake

drug (*Cadrina*) were included in the PACARDO-V questionnaire. Among the 1,831 respondents, only 8 (0.4%) reported use of *Cadrina.* Under the assumption that mis-statements about a fake drug may signal presence of falsely positive reports about other drug experiences or general response errors in the questionnaires completed by these participants, they were excluded from the study. Additionally, the three students that had more than 50% missing data were excluded, leaving a total of 1,820 respondents. A total of 960 respondents (52.5%) were female with 18 (1%) subjects not reporting gender. Regarding race, the majority (58.8%) of the participants identified themselves as "*Morena*" or brown (n=1074), 34.8% identified with *"Blanca"* or white (n=636), 3.3% identified with *"Negra"* or Black (n=60), and only 1.5% (n=27) identified with *"Indigena"* or Indigenous. Thirty individuals (1.6%) failed to respond to the item on race.

Due to inadequate space on the response form, age was subdivided into five levels and measured as a categorical variable. The first age level was from ages 11 to 12 (5.9%, n=107). The second age level was 13 to 14 (32.9%, n=601). The third age level was from 15 to 16 (39.8%, n=727). The fourth age level was 17 to 18 (19.9%, n=364). The fifth level was age 19 or above (1.1%, n=20). Only eight people (.4%) failed to respond to the item regarding age.

The sample was drawn from the five grades (7^{th} – 11^{th}) that make up high school in Venezuela and is described in Table 3.1. Number of students per grade level seems to be equally distributed across the sample.

Table 3.1 Grade Level in School

	Grade	Frequency	Percent	Valid Percent	Cumulative Percent
	7th	340	18.7	18.7	18.7
	8th	345	19.0	19.0	37.7
	9th	379	20.8	20.8	58.5
	10th	375	20.6	20.6	79.2
	11th	379	20.8	20.8	100.0
Total		1818	99.9	100.0	
Missing		2	.1		
Total		1820	100.0		

Teachers and school administrators were also asked to respond to an instrument that surveyed impressions regarding the environment of the school. A total of 57 school administrators or teachers responded to the 50-item questionnaire, or approximately four instruments per school. No demographic information was collected for teachers or administrators.

Measures

The PACARDO

The PACARDO (which stands for **PA**nama, **C**entral **A**merica, and **R**epublica **Do**mincana) questionnaire was developed for use in a NIDA-funded grant "Cross-National Research in Clusters of Drug Use" (Dormitzer, et al., 2004). In its original form it is a standardized self-administered questionnaire and was administered to nationally representative samples of students in Central America, Panama, and the Dominican Republic (N = 12,797).

The original instrument has 224 items placed in 19 zones or modules. Initial modules assessed general health constructs and social adaptation, such as are tapped by questions about headaches, positive moods, and getting along with other youths. The first questions about affiliation with drug-involved peers appear in the eighth module, after 88 questions on other aspects of youth health and well-being. Questions about the youth's own drug involvement begin at PACARDO question 162 in the 15th module, which starts out asking about legal consumption of alcoholic beverages, and tobacco. Subsequent modules address illegal drug activities (e.g., marijuana, coca paste), prior to a concluding 20-item module modeled after Johanson's Behavioral Repertoire Rating Scale (Johanson, Duffy, & Anthony, 1996) that assesses for frequencies of differing activities (e.g., going to religious activities, doing housework). In order to protect against false positive reports about drug experiences or general response errors in the questionnaires completed by the participants, questions on the first chance to try and first use of a fake drug (*Cadrina*) are included in the PACARDO questionnaire. The PACARDO instrument was pre-tested prior to its use in all seven countries. Prior to item-metric and psychometric optimization, the psychometric scales were first analyzed at the aggregate level. Exploratory factor analysis revealed that the scales generally were consistent across the seven countries. Table 3.2 represents examples of the internal consistency and reliability coefficients for constructs of the PACARDO as recorded by Dormitzer (2004).

Table 3.2 Reliability Estimates of Psycho-Social Constructs in the PACARDO (Dormitzer, 2004).

Construct Name	Estimated Reliability KR-20	No. of Items	Example Items (True-False response format)
Irritable/Crabby	0.72	8	~ ¿Has estado de mal humor? ~ "Have you been in a bad mood?"
Positive Mental Health	0.71	9	~ ¿Durante los últimos 6 meses, ¿has sentido bien? ~ "During the last 6 months, have you felt very happy?"
Mixed Distress	0.71	9	~ ¿Te has sentido nervioso? ~ Have you felt nervous a lot?
Externalizing Behavior	0.83	19	~ ¿Durante el ultimo año, has herido o hecho daño a los animales? ~ During the past year, have you harmed animals?
Family Attention	0.70	8	~ ¿Siempre pides permiso a tus padres cuando sales de la casa a divertirte? ~ Do you always ask your parents for permission when you go out and have fun?
Deviant Peer Affiliation	0.80	8	~ ¿Tus amigos han robado, o han causado daño a propósito a las cosas de otras personas? ~ Have your friends stolen things or damaged others' property on purpose?
Peers who use drugs	0.77	6	~ Algunos de mis amigos han fumado marihuana. ~ Some of my friends have smoked marijuana.
Poor School Adaptation	0.78	20	~ ¿Durante los ultimo seis meses, tus notas escolares han sido mejores que las de la mayoría de las de tus compañeros de clase? ~ During the past 6 months, Do you cut school more than two days a month?
Neighborhood Disadvantage	0.73	8	~ Hay suficientes lugares seguros para caminar o jugar en mi barrio o vecindario. ~ There are plenty of safe places to walk or spend time outdoors in my neighborhood.

The primary instrument employed in this study, the PACARDO-V (with the addition of the V for Venezuela) was developed from the original PACARDO. Authors of the PACARDO and researchers who used it in the field reported that the 224 items were excessive and that students were potentially answering the last sections of the instrument without much thought due to fatigue (J. Anthony, C. Dormitzer, & P. Obando, personal communication March, 2007). In order to avoid this problem in the present study, items regarding general health issues (e.g., during the past 6 months, I have not felt nauseated) and general mental health condition (e.g., Have you felt nervous a lot?) were deleted. Other subscales were reduced using a confirmatory factor analysis with categorical dependent variables procedure on MPlus 4.1 software (Muthen & Muthen, 2006), the results of which are reported below in the description of each variable. Full Information Maximum Likelihood (FIML) was used to estimate the parameters from data with missing values. The final version, PACARDO-V contains 112 items.

The original items of the PACARDO, and MAMBI, measures were subject to a translation, back-translation, and harmonization process and were pilot tested within the seven PACARDO countries (Dormitzer, et al., 2004). Items from the PACARDO were modified in the PACARDO-V to reflect idiosyncrasies of the Venezuelan culture and language use. For example, the term "pasta base" referring to coca base was change to "bazuco" for Venezuelan participants. Likewise, in the MAMBI, items were modified for increased accuracy and comprehension. The PACARDO-V and the MAMBI were then pilot tested on Venezuelan adolescents and teachers in order to assess the face validity of the instrument and to ensure cultural fit and accuracy before their actual implementation in the study. An iterative process was used to refine the instruments. First, after the initial

changes were implemented, a small group of acquaintances of the author were asked to read through the survey instruments and make comments or suggestions regarding the readability of each item. Next, after those changes had been incorporated, each school principal was asked to read through the PACARDO and make comments regarding the readability of each item. Two of the private schools formed a committee comprised of school psychologists, administrators, and teachers to assess the accuracy of the items. Third, the author and a Venezuelan research assistant who is a school teacher and psychologist evaluated each of the suggestions and made the appropriate changes to the instruments.

Dependent Variables

Occurrence of first drug use is the main response variable for this dissertation research. Occurrence of first drug use is measured in response to the standardized item, "How old were you the first time you tried (name of drug)?" for each drug in the study (alcohol, tobacco, inhalants, prescription medication (not prescribed to the youth), cocaine and any of its derivatives (i.e., crack, coca-base), ecstacy heroin, cadrina, and marijuana. In the case of multiple drug use, the youngest age of first use was recorded. Age of first drug use (AFU) is a continuous variable that ranged from 0 to 18 (0 = never used). Focus groups conducted in Venezuela, and personal interviews with administrators, teachers, psychotherapists, parents, and others revealed numerous anecdotal pieces of evidence for early onset of substance use. For instance, one teacher spoke of a 4-year-old who was given drugs to sell every day in order to have lunch money. Other individuals spoke of a practice in eastern Venezuela of putting small amounts of alcohol into male children's bottles, or fathers allowing their sons to drink

from their beverages in order to initiate them into the ostensibly masculine trait of drinking. Additionally, youth who reported extremely early ages of drug initiation reported use of only one drug at this age, and did not show any other patterns of falsifying or exaggerating their responses. Nevertheless, since youth reporting first drug use from ages 1-3 would most likely need to rely on a third person report due to memory limitations of very young children (i.e., 1-3), the six cases that reported these ages were considered outliers and were coded as missing values. Cases that reported first use at age 4 and up were retained in the study. Table 3.3 records frequencies of the reported ages and Figure 3.1 represents these graphically. Due to the high frequency of 0 responses (i.e., never used), the distribution of AFU is bimodal. A bimodal distribution creates difficulties for regression analysis violating the assumption of homogeneity of variance and normality. Therefore, AFU was adjusted so that the 0 responses were excluded from the analysis. This adjustment allowed for the assumptions of homogeneity and normality to be reasonably met.

Table 3.3 Age of First Drug Use

Age of First Drug Use			Adjusted Age of First Drug Use		
Age[a]	Frequency	Percent	Age	Frequency	Percent
0	293	16.10	0	0	0
4	4	0.22	4	4	0.26
5	13	0.71	5	13	0.85
6	14	0.77	6	14	0.92
7	19	1.04	7	19	1.24
8	52	2.86	8	52	3.41
9	61	3.35	9	61	3.99
10	185	10.16	10	185	12.12
11	150	8.24	11	150	9.82
12	286	15.71	12	286	18.73
13	274	15.05	13	274	17.94
14	224	12.31	14	224	14.67
15	168	9.23	15	168	11.00
16	41	2.25	16	41	2.69
17	21	1.15	17	21	1.38
18	2	0.11	18	2	0.13
Subtotal	1807	99.285	Subtotal	1514	99.149
Missing	13	0.71	Missing	13	0.8513
Total	1820	100	Total	1527	100.000
Mean		10.21	Mean		12.19
Median		12.00	Median		12.00
Mode		0.00	Mode		12.00
SD		4.96	SD		2.30

[a] Age of 0 indicates never used a drug.

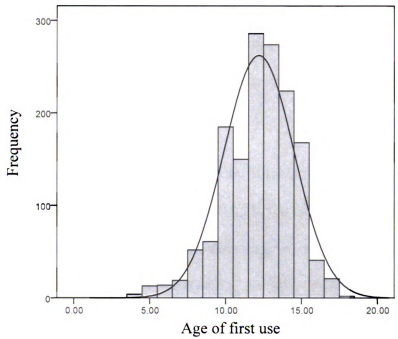

Figure 3.1 Histogram of Age of First Use

Independent Variables

The independent variables used in the study were: family attention, externalizing behavior, peer drug use, school climate, socioeconomic status, gender, and race. These seven variables were chosen for the present study due to their salience in the literature as significant covariates of adolescent substance use.

Reliability estimates.

Convention in measurement typically requires a reliability of 0.70 or higher in order to place confidence in the results of a given scale. However, violations of the assumptions underlying reliability estimates suggest caution when interpreting alpha. Further, the appropriate degree of reliability is directly related to the intended use of an instrument and its inherent dimensionality. For example, *indexes*, in contrast to *scales*, are empirically derived composites of items that are purposefully selected to correlate to some external criterion but not necessarily to each other (Reckase, 1996; Schmitt, 1996; Streiner, 2003). Moreover, Streiner (2003) asserts that researchers violate the premise of an index should they apply a reliability estimate that assumes interrelatedness (e.g., unidimensionality) among the items (e.g., coefficient alpha).

Reliability differs from validity in that it does not assess what a test or set of items attempts to measure, but only that something is being measured consistently. Cronbach's Alpha (coefficient alpha) is a measure of the extent to which responses from a specific sample of subjects are replicated or consistent across a set of test items, and is based on a single administration of the measure or instrument. Alpha is, therefore, indicative of interrelatedness, but not necessarily of homogeneity or unidimensionality of a construct

(Schmitt, 1996). As a result, an attempt to equate reliability to the degree to which a given single construct has been measured is inappropriate.

Feldt and Charter (2003) recommend against using coefficient alpha as a measure of reliability for some types of scales, and demonstrate how violations of equality among variances lead to biased estimates of alpha. They suggest that the reliability of both parallel and tau equivalent scales can be adequately addressed with coefficient alpha estimates, but that the use of coefficient alpha with congeneric scales will result in a negative bias. Congeneric scales loosen the assumptions of classical test theory and do not presume the equality of error variances in the measurement, nor of the scale of measurement. Items (subsets) of a scale are allowed to make differential contributions to the total-test true score. For example multidimensional scales, which are intended to assess differing aspects of the same construct in a single scale or subscale, tend to result in relatively lower alpha coefficients for one or more the following reasons given by Helms, Henze, Sass and Mifsud (2006): (a) unequal numbers of items reflecting the various dimensions, (b) unequal item variances, and (c) clusters of respondents who do or do not share similar attributes. In any of these circumstances, estimates of reliability using alpha will be conservative.

In order to assess for whether the data fit the previously described assumptions of equality among variances, Feldt and Charter (2003), recommend the simple strategy of examining the ratio of the largest item standard deviation (SD_L) to the smallest item standard deviation (SD_S). If the ratio (SD_L/SD_S) is between 1.00 and 1.30 (i.e., 30%), then alpha will not be an excessively conservative estimate and would be an appropriate reliability analysis. Likewise, they show that differences exceeding 30% indicate that the

data do not conform to the model of essentially tau equivalence on which alpha is based, and the researcher should consider alternative analyses.

Following the above-mentioned recommendations, the covariates in the present study are categorized as either indexes, or scales. In the event that the measure is an index, no reliability is reported. Contrarily, if the measure is a scale the assumptions for tau equivalence are assessed following the recommendations of Feldt and Charter (2003), and the appropriate reliability estimates are provided. If the assumptions for equivalence are met then Cronbach's Alpha is provided. If the assumptions for tau equivalence seem untenable, then the recommendations of Ferketich (1990), who suggest the use of theta or omega to estimate the reliability of item responses is followed. Omega employs the following formula:

$$\Omega = 1 - ([k - \Sigma h_i] / [k + 2b]).$$

In the equation, k equals the number of items, h_i is the commonality of the ith item, and b is the sum of the correlations among the item responses comprising the scale.

Additionally, where appropriate, a confirmatory factor analysis is provided to assess the relationships among the items of the measures in relation to the latent construct that they are assumed to measure.

Family attention.

Family Attention (FAM) in the originally PACARDO study was conceptualized as an adaptation of the Capaldi and Dishion scale on parental monitoring (Capaldi & Dishion, 1988). Although similar, FAM was expanded to include questions on affect and communication between parents and the adolescent. Also, the concept of parental monitoring was broadened to encompass other family members (e.g. grandmothers,

aunts, uncles) in the monitoring tasks in accordance with the extended family functions common among the Latin family (Fussell & Palloni, 2004). The items for the FAM latent trait are all yes/no responses. Family Attention is a level-1 covariate measured by the following seven items from the PACARDO-V:

V14. Are your parents or guardians aware of what you think or feel about things that are important to you?

V15. Are your parents or guardians aware of your likes and /dislikes?

V16. I always ask my parents for permission when I go out and have fun.

V17. Do you feel that your parents or guardians care about you?

V18. Are your parents or guardians often aware of where you are and what you are doing?

V20. Sometimes young people come home after school and don't find anyone home. Has your father, mother, or some other adult been home when you returned from school or work during the last school year?

V25. Do you frequently have discussions with your parents/guardian that end in a shouting match?

Each item on the scale is scored as yes/no response (yes = 2) such that high scores indicate increased FAM. For each observation, scores on the eight items were averaged and then standardized to create a more readily interpretable factor composite (mean = 0, SD = 1.0). Table 3.4 provides descriptive statistics for FAM and Figure 3.2 provides a graphical representation of the frequency distribution.

Table 3.4 Descriptive Statistics of Family Attention

	Frequency	
	Valid	1745
	Missing	75
Mean		.0000000
Std. Error of Mean		.02393879
Median		.3409703
Mode		1.06622
Std. Deviation		1.0000000
Skewness		-1.055
Std. Error of Skewness		.059
Kurtosis		.860
Std. Error of Kurtosis		.117
Minimum		-4.01052
Maximum		1.06622

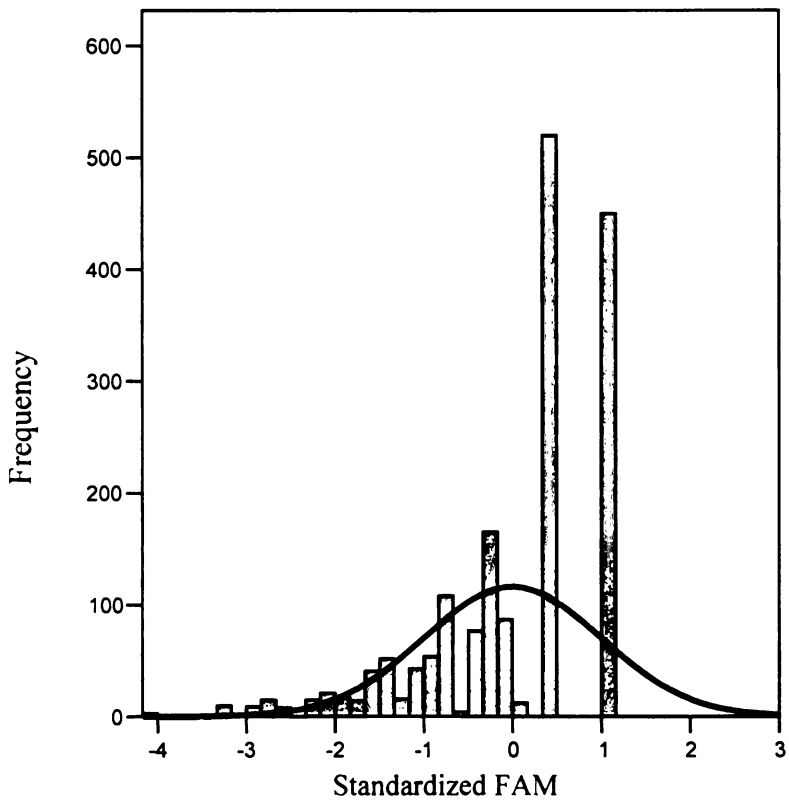

Figure 3.2 Histogram of FAM Frequency

The test for tau equivalence (SD_L/SD_S = .499/.238 = 2.0967) revealed that the assumption for equality among the error variances was not met for FAM, and therefore the omega method was used to assess for reliability. The obtained reliability coefficient for the present sample's scores was .71. A confirmatory factor analysis was employed to test for the fit of the items to the latent construct.

Confirmatory factor analysis (CFA) results for FAM revealed a reasonably well fitting model. Even though the Chi Square statistic was significant (χ^2 78.326, df 19 $p <$ .001), this is not unusual for large sample sizes and is acceptable when corollary fit indexes are satisfactory (Kline, 2005). Bollen (1989) recommends using a normed chi-square (χ^2model/*df*model) for larger sample sizes, and advocates that values of 2.0 up to 5.0 indicate a reasonably well fitting model. The normed chi-square for the present model is 4.1 and falls within the realm suggested by Bollen. Additional fit indexes such as the RMSEA (the statistic least susceptible to sample size), the Comparative Fit Index, and the Tucker-Lewis coefficient demonstrated a well fitting model (RMSEA .043, CFI .981, and TLI .980 respectively). All factor loadings were highly significant. Table 3.5 records the factor loadings for the variables of interest.

Table 3.5 CFA Model Results

Latent V.	Observed V.	Estimates	S.E.	Est./S.E.
FAM BY	V14	0.829	0.019	42.922
	V15	0.768	0.023	33.492
	V16	0.516	0.032	16.056
	V17	0.854	0.025	34.507
	V18	0.674	0.025	27.338
	V20	0.215	0.038	5.675
	V25	0.41	0.033	12.29

Peer drug use

Peer drug influence (PDRG) a level-1 covariate was measured by six items from the PACARDO-V:

V30. Some of my friends smoke cigarettes.

V31. Many of my friends smoke cigarettes.

V33. Some of my friends have smoked marijuana.

V34. Have you had friends who like to sniff glue or gasoline?

V35. Some young people have started using coca base, crack, or cocaine. Do you have a friend who has used coca base, crack, or cocaine?

V36. Do you have several friends who have used coca base, crack, or cocaine?

Each item on the scale was scored as yes/no response (yes = 2) such that higher scores indicated increases in peer drug use. The scores for the six items were averaged for each observation and then standardized (mean = 0, SD = 1.0) for interpretability. PDRG is categorized as an index in that the measure is an empirically derived composite of items intentionally selected to be related to the external criterion of potential peer drug influence, but not necessarily to each other. Table 3.6 provides descriptive statistics for PDRG, and Figure 3.3 provides a graph of the frequency distribution.

Table 3.6 Descriptive Statistics of PRDG

	Frequency	
	Valid	1783
	Missing	37
Mean		.0000000
Std. Error of Mean		.02368232
Median		.3428144
Mode		1.06285
Std. Deviation		1.00000000
Skewness		-.870
Std. Error of Skewness		.058
Kurtosis		.336
Std. Error of Kurtosis		.116
Minimum		-3.25736
Maximum		1.06285

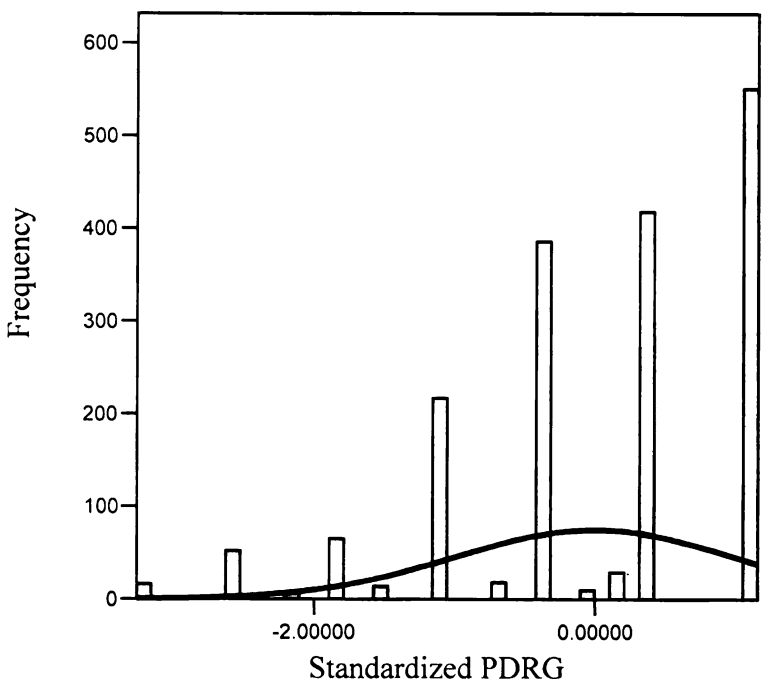

Figure 3.3 Histogram of PDRG Frequency

Externalizing behavior

Externalizing behavior (EXTB) is a level-1 covariate, which on the original PACARDO was adapted from the Drug Use Screening Inventory (Tarter & Hegedus, 1991) for use in research on non-clinical samples. The items for the EXTB latent trait are all yes/no responses (yes = 2) such that higher scores indicate increases in EXTB. Individual scores for the five items were averaged and standardized (mean = 0, SD = 1.0) for interpretability. Tables 3.7 provide descriptive statistics for EXTB, and Figure 3.4 provides a histogram of the frequency distribution for EXTB.

Table 3.7 Descriptive Statistics of EXTB

	Frequency	
	Valid	1803
	Missing	17
Mean		.0000000
Std. Error of Mean		.02355061
Median		.2351980
Mode		.23520
Std. Deviation		1.00000000
Skewness		-.911
Std. Error of Skewness		.058
Kurtosis		.492
Std. Error of Kurtosis		.115
Minimum		-3.19850
Maximum		1.09362

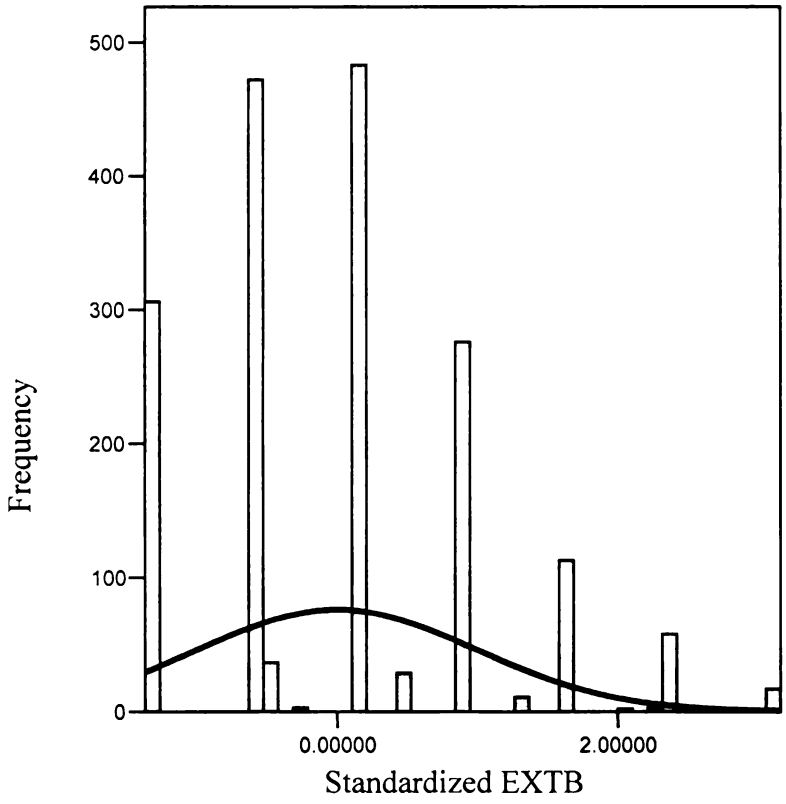

Figure 3.4 Histogram of EXTB Frequency

The following items from the PACARDO-V measure EXTB:

V40. Have you intentionally damaged another person's belongings during the last school year?

V41. Have you stolen anything during the last school year?

V42. Have you done anything risky or dangerous during the last school year?

V43. Is it true that the majority of the time you don't do your homework?

V48. Have you ever been suspended from school?

The test for tau equivalence (SD_L/SD_S = .495/.323 = 1.532) revealed that the assumption for equality among the error variances was not met for EXTB, and therefore the omega method was used to estimate a measure of reliability. The obtained reliability coefficient for the present sample's scores was .63.

A confirmatory factor analysis was employed to test for the fit of the items to the latent construct. CFA results for EXTB revealed an excellent fitting model (χ^2 5.345, df 5 p< .3753). Additional fit indexes also suggested an excellent fit RMSEA (.006), CFI (.999), and TLI (.999). All factor loadings were highly significant. Table 3.8 records the factor loadings for EXTB.

Table 3.8 CFA Results for EXTB

Latent V.	Observed V.	Estimates	S.E.	Est./S.E.
EXTB	V40	0.68	0.046	14.877
	V41	0.681	0.046	14.714
	V42	0.581	0.042	13.854
	V43	0.406	0.044	9.281
	V48	0.555	0.05	11.192

School Climate

School Climate (SCLM) is a level-1 covariate, which on the original PACARDO was adapted from the Drug Use Screening Inventory (Tarter & Hegedus, 1991) for use in research on non-clinical samples. The items for the SCLM latent trait are all yes/no responses (yes = 2) such that higher scores indicate decreases in SCLM. Individual scores for the four items were averaged and standardized (mean = 0, SD = 1.0) for interpretability. The test for tau equivalence (SD_L/SD_S = .441/.216 = 2.042) revealed that the assumption for equality among the error variances was not met for SCLM, and therefore the omega method was used to estimate a measure of reliability. The obtained reliability coefficient for the present sample's scores was .57. Table 3.9 provides descriptive statistics for SCLM and Figure 3.5 provides a histogram of the frequency distribution for SCLM.

Table 3.9 Descriptive Statistics for SCLM

	Frequency	
	Valid	1797
	Missing	23
Mean		.0000000
Std. Error of Mean		.02358989
Median		-.7251664
Mode		-.72517
Std. Deviation		1.00000000
Skewness		1.365
Std. Error of Skewness		.058
Kurtosis		1.440
Std. Error of Kurtosis		.115
Minimum		-.72517
Maximum		3.95391

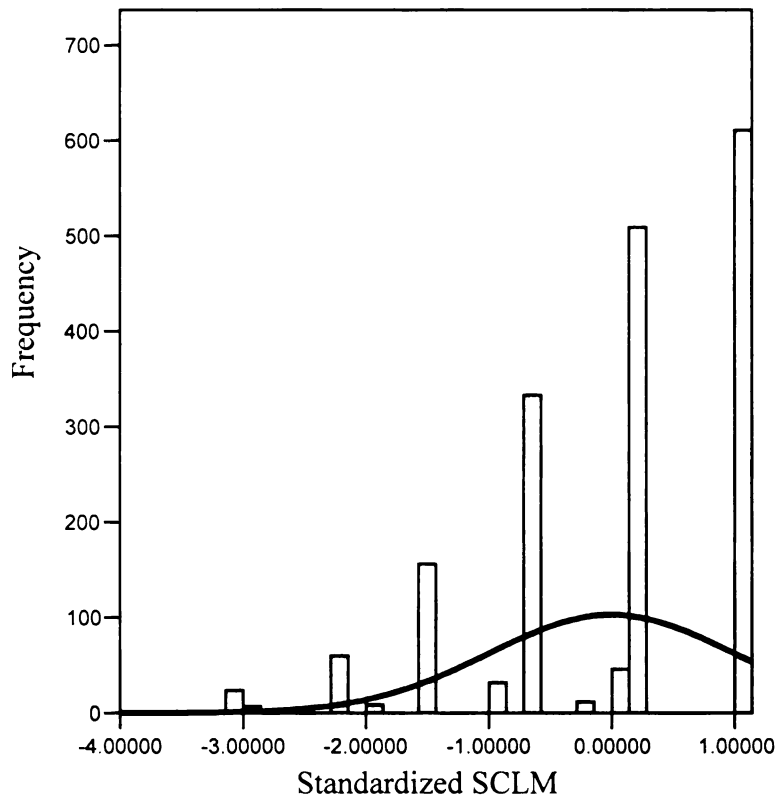

Figure 3.5 Histogram of SCLM Frequency

The following items from the PACARDO-V measure SCLM:

V44. I have had excellent relations with the majority of my teachers.

V50. Some young people feel happy when they think of going to school. In overall, have you felt happy when you think of going to school?

V51. I have thought about quitting school altogether?

V52. Sometimes young people say, "going to school is a waste of time." For you, has going to school been a waste of time during this last year?

A confirmatory factor analysis was employed to test for the fit of the items to the latent construct. CFA results for SCLM revealed a good fitting model (χ^2 6.101, df 2 p< .0473). Additional fit indexes also suggested a good fit RMSEA (.035), CFI (.983), and TLI (.956). All factor loadings were highly significant as can be seen on Table 3.10, which records the factor loadings for SCLM.

Table 3.10 CFA Results for SCLM

Latent V.	Observed V.	Estimates	S.E.	Est./S.E.
EXTB	V44	0.51	0.051	9.981
	V50	0.692	0.057	12.06
	V51	0.639	0.058	10.991
	V52	0.52	0.068	7.661

Socioeconomic status.

SES is a level-1 covariate and was measured by five items from the PACARDO-V:

V6. What type of neighborhood do you live (ordinal variable scored 1-3).

V7. How many vehicles does your family have (ordinal variable scored 1-5)?

V9. How many bedrooms does your house have (ordinal variable scored 1-5)?

V12. What academic grade did your father (or the person who is like your father) achieve (ordinal variable scored 1-5)?

V13. What academic grade did your mother (or the person who is like your father) achieve (ordinal variable scored 1-5)?

The items that make up the SES scale were measured on a Likert type scale and scored by summing across the five items for each observation. The composite created from the sum was then standardized (mean = 0, SD = 1.0) for interpretability with a positive score indicating above average SES. SES is categorized as an index in that the measure is an empirically derived composite of items intentionally selected to be related to the external criterion of socio-economic status, but not necessarily to each other. Table 3.11 provides descriptive statistics for SES and Figure 3.6 provides a histogram of the frequency distribution for SES.

Table 3.11 Descriptive Statistics for SES

	Frequency	
	Valid	1778
	Missing	42
Mean		.0000000
Std. Error of Mean		.02371560
Median		-.0473766
Mode		-.04738
Std. Deviation		1.00000000
Skewness		.115
Std. Error of Skewness		.058
Kurtosis		-.817
Std. Error of Kurtosis		.116
Minimum		-2.27878
Maximum		2.74188

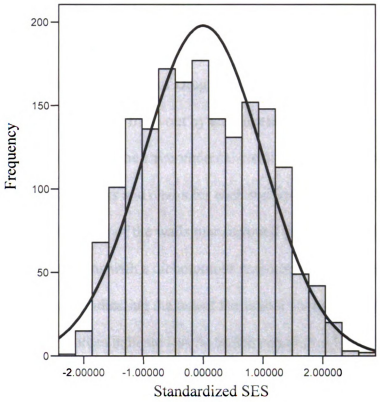

Figure 3.6 Histogram of SES Frequency

The MAMBI

The MAMBI (Which stands for Guia de Observacion **M**edio **AMBI**ente del Salon, Colegio y Vecindario, or Observational Guide for the Classroom, School, and Neighborhood Environment) was developed for use in a NIDA-funded grant "Cross-National Research in Clusters of Drug Use" (Dormitzer, et al., 2004) and is an observational guide to be filled out by administrators and teachers. The purpose of the MAMBI is to assess for the environmental conditions in which the children are studying (Are there enough desks and chairs for each student to have one? Is there barbed wire or broken glass on the top of the walls that surround the school?). The MAMBI is an index comprised of 40 items with a dichotomous response set. Each item was summed to create a factor composite indicating the extent the school possessed a favorable environmental condition. High values indicate less favorable conditions. No published studies have reported on the validity of the MAMBI. The MAMBI is categorized as an index in that the measure is an empirically derived composite of items intentionally selected to be related to the external criterion of the school environment, but not necessarily to each other. Table 3.12 provides descriptive statistics for the MAMBI and Figure 3.7 provides a histogram of the frequency distribution for the MAMBI.

Table 3.12 Descriptive Statistics for MAMBI

	Frequency	
	Valid	39
	Missing	14
Mean		60.1026
Std. Error of Mean		.58524
Median		60.0000
Mode		59.00
Std. Deviation		3.65481
Skewness		.496
Std. Error of Skewness		.378
Kurtosis		1.455
Std. Error of Kurtosis		.741
Minimum		53.00
Maximum		71.00

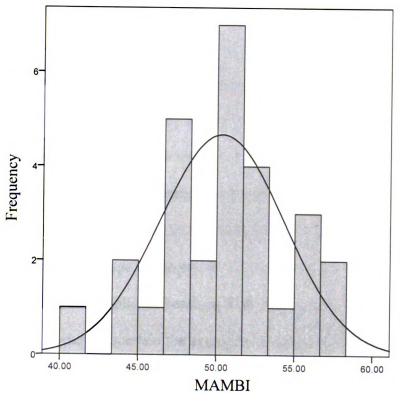

Figure 3.7. Histogram of the MAMBI

Data Analytic Plan

Modeling Approaches

The first data exploration step involved descriptive analyses to characterize the sample, examine the data for systematic patterns in missing values, and to assess the first initiation of use of all drugs (i.e., alcohol, tobacco, inhalants, cocaine, prescription pills, ecstasy, heroin, and marijuana.). Second, contingency table analyses and ANOVA were used to further explore if drug use varied by individual characteristics.

Students were not selected randomly across a sampling frame of students. Rather districts were selected, then schools, and finally students. Also given that schools often are a homogenizing factor in the lives of youth, the non-independence of observations must be accounted for in the statistical modeling approach. Therefore, the third step of this analysis used a multilevel modeling approach that allowed for the control of the variation in the outcome that may be attributable to the environments in which the students interacted. To model the dependent variable, AFU, HLM 6.02a (Raudenbush, Bryk, & Congdon, 2004), software was used under a general modeling strategy that moved from modeling the level-1 variance to the level-2 variance adding covariates to the model according to their theoretical importance.

The *unconditional model or Null model* (i.e., no explanatory variables) was developed in order to gauge the degree of variability between schools in drug use. The unconditional model established baseline effects for the coefficients and the variance components in order to ascertain the aggregate variance that might be explained by later models.

Level-1 *conditional models* (models 1-6) introduced sequentially the following covariates FAM, EXTB, PDRG, SCLM, SES, and FEM (gender). Model-7 introduced a random coefficients model and determined whether the level-1 slopes should be fixed, allowed to vary randomly, or allowed to vary non-randomly. Model-8 introduced level-2 covariates to model the variance in the intercept and regression coefficients.

Research Questions and Hypotheses

The specific research questions and their analytic procedures are as follows:

1. What percentage of youth used each of the following drugs: tobacco, alcohol, marijuana, cocaine, crack, heroin, amphetamines, inhalants, ecstasy, or prescription?

   Data analysis for question 1: Descriptive.

2. Did age of first drug use vary by individual variables?

   2.1. Did age of first actual drug use vary by gender?

   Hypothesis: The age of first drug use will vary by gender.

   2.2. Did age of first actual drug use vary by race?

   Hypothesis: The age of first drug use will vary by race.

   2.3. Did age of first drug use vary by SES?

   Hypothesis: The age of first drug use will vary by SES.

   2.4. Did age of first drug use vary by family attention?

   Hypothesis: The age of first drug use will vary by family attention.

   2.5. Did age of first actual drug use vary by externalizing behavior?

Hypothesis: The age of first drug use will vary by externalizing behavior.

2.6. Did age of first drug use vary by peer drug use?

Hypothesis: The age of first drug use will vary by peer drug use.

2.7. Did age of first actual drug use vary by school climate?

Hypothesis: The age of first drug use will vary by school climate.

Data analysis for questions 2.1- 2.7: Hierarchical Linear Modeling (HLM)

3. Were school characteristic related to the onset of drug use?

3.1. Did School Condition help to explain the variance in age of first drug use?

Hypothesis: School Condition will be related to age of first drug use.

3.2. Did Mean SES help to explain the variance in age of first drug use?

Hypothesis: Mean SES will be related to age of first drug use.

3.3. Did Mean School Climate help to explain the variance in age of first drug use?

Hypothesis: Mean School Climate is related to age of first drug use.

Data analysis for question 3.1-3.3: HLM.

CHAPTER IV: RESULTS

Descriptive Statistics

This chapter presents the results of the data analysis for age of first drug use (AFU) in regards to the specific hypotheses set forth in previous sections. This study sought to shed light on different risk and protective factors that play a role in the initiation of substance use among school-attending youth in Caracas, Venezuela. Fourteen schools were surveyed, six of which were private institutions and eight were public. Of the 1,820 students included in the analysis, 847 (46.5%) were from private schools. High schools in Venezuela are made up of a total of five grades, 7^{th}-11^{th}. The sample was equally distributed among the five grades with n=340 in 7^{th}, n=345 in 8^{th}, n=379 in 9^{th}, n=375 in 10^{th}, and 379 in 11^{th}. The majority of participants lived in the lowest housing area (n=1007, 55.7%), did not own a vehicle (n=723, 39.7%), lived in a home with 2-3 bedrooms (n=1116, 61.3%), and had 4-6 people living in their home (n=1104, 60.9%). The majority of respondents reported educational levels of the father and mother as having finished a post high school degree (n=542, 30.2% and n=543, 30.1% respectively). Only 35.5% of fathers and 35.3% of mothers were reported as not having finished high school. A total of 987 (54.2%) participants reported belonging to the Catholic religion, 322 (17.7%) reported belonging to a non-Catholic Christian religion, 4 (.2%) students reported being Muslim, and 110 (6.1%) students reported belonging to some other religion. A total of 387 (21.3%) students reported belonging to no religion (see Table 4.1 for a complete description of demographics).

Table 4.1 Demographics of Sample

Grade	N	%
7th	340	0.187
8th	345	0.19
9th	379	0.208
10th	376	0.207
11th	380	0.209
Total	1820	100
Housing		
low-income	1007	0.553
Middle-income	761	0.418
Upper-income	41	0.023
Missing	11	0.006
Total	1820	100
Vehicles owned		
None	723	0.397
One	611	0.336
Two	242	0.133
Three	92	0.051
Four or more	141	0.077
Missing	11	0.006
Total	1820	100
Number of bedrooms in home		
None (one room)	45	0.025
1	181	0.099
2-3	1116	0.613
4-5	378	0.208
6 or more	89	0.049
Missing	11	0.006
Total	1820	100
Number of people living in home		
1-3	327	0.18
4-6	1109	0.609
7-8	214	0.118
9-10	90	0.049
More than 10	73	0.04
Missing	7	0.004
Total	1820	100

Table 4.1 Demographics of Sample (Cont.)

Religion		
Catholic	987	0.5423
Christian/not Catholic	322	0.1769
Muslim	4	0.0022
Other	110	0.0604
None	387	0.2126
Missing	10	0.0055
Total	1820	100

Parent Educational Level	Father		Mother	
	N	%	N	%
Some Elementary Edu	239	0.1313	249	0.1368
Some Secondary Edu	399	0.2192	391	0.2148
Finished Secondary Edu	419	0.2302	416	0.2286
Some Higher Edu	198	0.1088	209	0.1148
Finished Higher Edu	547	0.3005	545	0.2995
Missing	18	0.0099	10	0.0055
Total	1820	100	1820	100

Overall, the sample was comprised of a high number of students that had consumed alcohol (81.3%) and cigarettes (31.5%) on at least one occasion (see table 4.2 for details). Approximately 48% of the sample had used at least one drug, 28% had used two drugs, and 7.5% had used three or more drugs (see table 4.3). As a result of the higher rates of alcohol and cigarette consumption in the sample, a distinction was made between legal and illegal drug use. While not technically legal for the majority of the youth in the sample (legal age to purchase alcohol and cigarettes in Venezuela is 18) alcohol and cigarette use are culturally sanctioned as evidenced by the fact that there is virtually no police action taken against underage youth who consume alcohol or cigarettes, nor against store owners who sell these drugs to them. However, codes for drugs such as morphine or diazepam that require a prescription, or those that are

technically illegal are more readily enforced. Following this distinction, approximately 13% of the sample had consumed an illegal drug and 2.3% had consumed multiple illegal drugs (see table 4.2). The average age of initiating drug use was 12.19 (SD=2.67) for any drug and 12.52 (SD=2.68) for illegal substances (see table 4.4).

Table 4.2 Frequencies of Students Reporting Having Initiated Drug Use

	Used	(%)	Never Used	(%)	Missing	(%)	Total	(%)
Cigarette	572	31.5	1240	68.1	8	0.4	1820	100
Alcohol	1477	81.3	334	18.4	9	0.5	1820	100
Cocaine	5	0.3	1802	99.4	13	0.7	1820	100
Ecstasy	17	0.9	1790	98.7	13	0.3	1820	100
Inhalants	45	2.5	1762	97.2	13	0.3	1820	100
Heroin	8	0.4	1800	99.3	12	0.3	1820	100
Prescription	160	8.8	1644	90.7	16	0.9	1820	100
Marijuana	68	3.8	1719	94.5	33	1.8	1820	100
Any Drug[a]	1513	83.5	287	15.8	12	0.7	1820	100
Illegal Drugs[b]	240	13.2	1521	83.9	51	2.8	1820	100
Multiple Illegal[b]	42	2.3	1715	94.6	55	3.0	1820	100

[a] *Refers to at least one of the drugs listed on the PACARDO-V*

[b] *Refers to any drug from the PACARDO-V except alcohol and cigarettes.*

Table 4.3 Number of Different Drugs Consumed

# Drugs	N	%
0	287	15.77
1	873	47.97
2	509	27.97
3	101	5.55
4	25	1.37
5	7	0.38
6	2	0.11
7	1	0.05
Total	1805	99.18
Missing	15	0.82
Total	1820	100

Table 4.4 Ages of First Initiation of Substance Use					
	N	Mean	Std. Deviation	Min. Age	Max. Age
Illegal Drugs[a]	240	12.52083	2.679455	5	19
Any Drug[b]	1513	12.19167	2.301141	4	18

[a] *Refers to at least one of the drugs listed on the PACARDO-V*

[b] *Refers to any drug from the PACARDO-V except alcohol and cigarettes.*

Preliminary Analyses

Age of First Drug Use

Gender, race, SES, family attention, externalizing behavior, peer drug use, and school climate were examined for main effects on the dependent variable of age of first drug use in order to inform later model building. To assess the effect of ordinal and binary variables (i.e., gender, and race) on age of first drug use a series of ANOVAs were performed. To assess the effects of the continuous variables (i.e., SES, family attention, externalizing behavior, peer drug use, and school climate) on the dependent variable an OLS regression was performed with a simultaneous entry method. Simultaneous regression is useful in exploratory research to determine the relative influence of each of the variables studied, since it estimates the direct effects of each independent variable on the dependent variable. It is important to note here that these findings are only exploratory since they do not account for dependencies within the observations due to nesting. A basic assumption of both ANOVA and regression analysis is the independence of observations. Since the sample of students was not drawn randomly, and is nested within schools, this assumption is violated and thus increases the tendency toward Type I

errors. Still, the findings are useful insofar as they provide information for subsequent model building.

Gender

An examination of how gender influences initiation into drug use revealed significant differences between males and females in mean age of first drug use. The mean age for females (12.4 years) was found to differ significantly from the mean age of males (11.9 years) at F (1, 1498) = 13.818, $p < .001$. These findings suggest that males and females do differ in regards to age of first drug use, and that gender should be included in subsequent models to control for this variability.

Race

No significant differences for age of first drug use were found for race (F = 1.235, *df* 1, 1496, p = .295). However, given the unequal groups for the black and indigenous categories the four groups were re-categorized by skin tone (i.e., light and dark) creating a dichotomous variable (light = 1) and the analyses rerun. Again, no differences were found on the response variable by race.

SES, Family Attention, Externalizing Behavior, Peer Drug, and School Climate

Age of first drug use was regressed on SES, family attention, externalizing behavior, peer drug, and school climate in order to assess for potential main effects. The results indicated that the five variables had significant regression coefficients (see table 4.5). However, the proportion of explained variance in age of first drug use is a relatively

small 6% (adjusted R^2 = .058). Additionally, diagnostics were inspected to assess for collinearity. The variance inflation statistics (VIF) and the tolerance of variables were all close to 1, which would indicate independence. These results suggest that all five variables should be considered for subsequent modeling.

Table 4.5 Regression: Age First Use

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
	B	S.E.	Beta	t	Sig.	Tolerance	VIF
(Constant)	12.1029	0.0887		136.379	0		
SES	-0.2694	0.0603	-0.1180	-4.4672	0.0000	0.9779	1.0226
FAM	0.2641	0.0647	0.1181	4.0810	0.0000	0.8154	1.2264
SCLM	0.1473	0.0633	0.0659	2.3254	0.0202	0.8489	1.1780
PDRG	-0.1478	0.0648	-0.0651	-2.2811	0.0227	0.8384	1.1928
EXTB	-0.2254	0.0698	-0.0980	-3.2309	0.0013	0.7418	1.3481
FEMALE	0.3603	0.1224	0.0790	2.9427	0.0033	0.9474	1.0555

Correlations were run to examine the strength of the relationship between the level-1 covariates and age of first drug use, and to assess again for potential confounds caused by multicollinearity. Results showed Pearson correlation coefficients for family attention (.126), externalizing behavior (-.151), school climate (.125), and SES (-.147), were significant at the $p < 0.01$ level (2-tailed) and Spearman's Rho for female (.095) was significant at $p < .001$. The only covariate that was not significant was peer drug influence (.022). The correlations between covariates did not raise any concern for collinearity (see Table 4.6). The highest correlation was between externalizing behavior and peer drug use (-.382).

Correlations between level-2 covariates and age of first drug use were also calculated to assess their relative strength and to assess for potential collinearity (see

Table 4.7). Results found that all the covariates were significantly correlated with age of first drug use at the $p < 0.01$ level (2-tailed). MSES had the strongest relationship (-.248) followed by MSCLM (-.212), MCOND (.207), and MPDRG (.084). The correlations between the covariates suggested that MSES and MSCLM were highly related (.810), as were MSES with MCOND (-.700).

Table 4.6 Correlations Level-1 Covariates

	FAM	EXTB	PDRG	SCLM	SES	FEM
FAM	1	-.355**	.318**	.268**	0.025	-.070**
EXTB	-.355**	1	-.382**	-.349**	0.024	-.127**
PDRG	.318**	-.382**	1	.207**	.054**	0.03
SCLM	.268**	-.349**	.207**	1	-.075**	.056**
SES	0.025	0.024	.054**	-.075**	1	-.124**
FEM	-.095**	-.127**	0.03	.056**	-.124**	1

**Correlation is significant at the 0.01 level.

*Correlation is significant at the 0.05 level.

FAM = family attention; EXTB = externalizing behavior; PDRG = peer drug use; SCLM = school climate; SES = socioeconomic status; FEM = female.

Table 4.7 Corrleations Level-2 Covariates

	AFU	MSES	MPDRG	MSCLM	MCOND
AFU	1	-.248**	.084**	-.212**	.207**
MSES	-.248**	1	-.293**	.810**	-.700**
MPDRG	.084**	-.293**	1	-.163**	.373**
MSCLM	-.212**	.810**	-.163**	1	-.577**
MCOND	.207**	-.700**	.373**	-.577**	1

**Correlation is significant at the 0.01 level.

* Correlation is significant at the 0.01 level.

AFU = age of first drug use; MSES = mean socioeconomic status; MPDRG = mean peer drug use; MSCLM = mean school climate; MCOND = mean school condition.

Missing Data

As was mentioned in chapter 3, eleven students were removed from the data set for missing data or marking the non-response option. Eleven students declined to assent to participate and the parent/guardian of twenty-four students requested that their students not participate, and were allowed to leave before data collection began. Thus, the survey participation was approximately 98% of the targeted sample of school-attending youths (i.e., 1 – [Total non-participation/(total nonparticipation + Total valid observations)] = percent participation, or 1 – [46/(46+1820)] = .9753). Student-level non-participation also might have occurred if parents instructed their children to stay home from school on the day of the assessment, or if students chose not to come to school in order to avoid participation. This practice, if it occurred, would have been minimal since the exact day of the assessment was not announced to either the parents or the students, and teachers reported normal rates of absenteeism.

Values were considered missing under the following conditions: (a) if there was no response (left blank), (b) if the "no response" option was marked, or (c) if more than one response was marked for any given item. Missing values were very low ranging from 0 (0%) to a maximum of 125 (6.8%) for any given variable. The highest rate of missingness was for the demographic variable Religion (n = 125, 6.8%). There was a mean of 38.28 (2.01%) missing values (SD = 29.33) across the entire data set. As a result of low levels of missingness no systematic patterns were detectable, and missing values were considered missing completely at random and treated using listwise deletion when they occurred.

In conclusion, preliminary analyses are useful to determine the relative influence of each of the independent variables on the dependent variable in order to guide subsequent modeling. In multilevel modeling omitting a relevant independent variable may lead to model misspecification, while including an excessive amount of explanatory variables may create instability in the model. Instability means that small changes to the model may lead to large changes in the results due to, for instance, multicollinearity (Kreft & de Leeuw, 1998; Raudenbush & Bryk, 2002). These preliminary analyses suggest the inclusion of gender, SES, family attention, externalizing behavior, peer drug use, and school climate as level-1 covariates, and MSES, MSCLM, MCOND, MPDRG as level-2 covariates in the development of a multilevel model of age of first drug use. The next section will address the development of these models.

Multilevel Models

Age of First Drug Use: The Null Model

Several models were fit in order to determine the effects of SES, family attention (FAM), school climate (SCLM), gender (FEM), peer drug influence (PDRG), and externalizing behavior (EXTB) on Age of First Drug Use (AFU). The analysis began by fitting a one-way Random-Effects ANOVA model. This model is referred to as the null model or the unconditional model in that there are no covariates at either level-1 or level-2. The null model is used as a baseline in order to determine the total amount of variability in the outcome within and between schools and as a comparison for subsequent conditional models. Specifically the model was:

$$AFU_{ij} = \beta_{0j} + r_{ij}$$

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

Using full maximum likelihood estimation, the model converged in four iterations. The average school mean, $\gamma_{00,}$ (intercept) was estimated as 12.27. The estimated between school variance, τ_{00} was 0.3407 and the estimated within variance, σ^2, was 4.95704. Based on the covariance estimates, the intra-class correlation (ICC): 0.3407/(0.3407 + 4.95704) = .06431. This indicates that the portion of the total variance that occurs between schools is a small 6.4%, leaving 93.6% of the variance to be explained (1-.064) within schools. The 95% confidence intervals for the magnitude of variation among schools means was: $12.27 \pm 1.96*(0.3407)^{1/2} = (11.126, 13.414)$. Again, this indicates that there is a relatively small amount of variation in age of first drug use among schools. The magnitude of the variation among schools can be formally tested (H_0: $\tau_{00} = 0$), and is distributed using a large-sample $\chi 2$ with J – 1 degrees of freedom under the null hypothesis. The present model takes on a value of 119.42025 with 13 degrees of freedom (J = 14 schools), and is highly significant ($p < 0.001$). Taken together, what the null model shows is that there is variance to be explained in AFU, and that the variance to be explained seems to be primarily within schools, that is at level-1. One explanation for a small proportion of between school variance may be the structure of employment in Venezuelan schools. Very few teachers in Venezuela are so called "resident teachers." Unlike the system in U.S., where teachers are employed by a school and do all of their work at one location, the Venezuelan teachers are primarily hired by the hour and may teach in numerous schools during a given week. This practice of teachers moving from school to school undoubtedly reduces the heterogeneity among schools. Additionally, the sample of schools having come from the western section of Caracas, that is a singular

geographic location within the city, certainly contributes to the lack of variability found between schools.

Even though the variance that remains to be modeled at level-2 is small, it is still important to model. Due to the nested design of the data, a multilevel modeling approach is still recommended for several reasons (Raudenbush & Bryk, 2002): First, Instead of erroneously assuming that each observation adds a piece of independent information, a multilevel model correctly accounts for the dependence in the data providing appropriate unbiased and efficient estimates of fixed effects and standard error estimates. Second, a class-level analysis would render low power to find significant results at the student level, whereas a multilevel approach provides efficient parameter estimates in a nested design without sacrificing power. Third, a multilevel model allows for a test of homogeneity of regression and thus provides information regarding whether a given covariate should be allowed to vary randomly or to remain fixed.

Age of first drug use – Model-1

In order to address research question 2 outlined in chapter 3, and its subsequent hypotheses, a series of models were fit that would represent age of first drug use (AFU) in each of the J schools. A stepwise strategy was used that added variables according to theoretical importance. All variables at level-1 were entered into the equation as raw score variables (i.e., not mean centered). An uncentered approach was selected since theoretically there is no reason to remove the between school variation as occurs in centering. Moreover, this approach is a better fit to the purposes of this study given the

focus on individual onset of substance use and to the data given the small proportion of variance in the outcome attributed to level-2 (Kreft & de Leeuw, 1998).

The models began at level-1, specifically AFU for student *i* in school *j* was regressed on the primary variable of interest for this study Family Attention (FAM). Preliminary analysis showed a significant positive correlation between FAM and AFU (.156). The model is represented formally,

$$AFU_{ij} = \beta_{0j} + \beta_{1j} (FAM)_{ij} + r_{ij}$$

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

where β_{0j} is the average age of first drug use in school *j* when FAM is 0. Since all the variables with the exception of those that are binary were standardized with a mean of 0 and a standard deviation of 1, the intercept becomes the average age of first drug use in school *j* for those individuals who have the mean scores on X. The relationship between regression coefficients and the outcome, then, can be understood in terms of a change of one standard deviation in X produces a change corresponding to the coefficient in Y. For example, a coefficient of .33 can be understood as an increase of one standard deviation in X will result in a .33 of a year increase in AFU, or approximately 4 months.

The model with FAM converged in 4 iterations allowing the deviance of this model to be compared with the deviance of the null model. Adding FAM to the model created a better fitting model as can be seen by the substantial reduction in deviance between the two models with only one extra parameter estimated ($\chi 2 = 293.859$, *df* 1 $p < .001$). Under full maximum likelihood estimation, differences between deviances in two (nested) models have a chi-square distribution, and these differences, compared to the degrees of

freedom lost, can show if one model is a significant improvement over the other. A likelihood ratio test can be used to test the significance of magnitude of the improvement. The *t* ratio for FAM is a highly significant positive value (5.140) indicating that FAM is an important predictor for AFU. These findings support hypothesis 2.4 "*The age of first actual drug use will vary by family attention,*" and indicate that on average approximately 0.2934 of an increase in AFU (i.e., ≈ 4 months) occurs for every standard deviation increase in FAM ($AFU = 12.3334_j + .293375_j * FAM_{ij} + r_{ij}$) in school *j*. The level-2 slope for FAM remained constrained to zero.

Age of first drug use – Model-2

The literature indicates that peer drug use (PDRG) is a strong correlate of adolescent substance use. However, preliminary analyses revealed a non-significant correlation between PDRG and AFU (.022). Still, given the importance of this variable in the literature it was entered into the level-1 model to represent formally its relationship with AFU. Specifically,

$$AFU_{ij} = \beta_{0j} + \beta_{1j}(PDRG)_{ij} + \beta_{2j}(FAM)_{ij} + r_{ij}$$

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

where β_{0j} is the average age of first drug use in school *j* when FAM and PDRG are both zero. Again, the model converged in 4 iterations. Since this model is nested within the previous one, the deviance scores can be compared to assess model fit. The change in

deviances was an impressive 126.180 with 1 additional parameter estimated, which indicates that the model containing PDRG does seem to reduce the variance in AFU. However, the t-ratio was not significant (t= -.347, p= 0.728). Additionally the regression coefficient was very small (-0.021736) and the standard error relatively high (0.062661). Together these indicate that the variance explained by PDRG in the model is meager and non-significant, and therefore does not support hypothesis 2.6 "*The age of first actual drug use will vary by peer drug use.*" This is a very surprising finding given the prevalence of peer influences in the literature on adolescent substance use in the U.S. and will be addressed in-depth in the next chapter. Given that PDRG does not add any substantial information to the prediction of AFU, it was dropped from the model. FAM remained in the model with a randomly varying intercept and fixed slopes.

Age of first drug use – Model-3

A third variable strongly supported by the literature as predictive of adolescent drug use is externalizing behavior (EXTB). Preliminary analyses revealed a significant negative correlation between peer EXTB and AFU (-.151). In order to assess how EXBT influences AFU holding FAM constant, it was entered into the model at level-1. Specifically,

$$AFU_{ij} = \beta_{0j} + \beta_{1j} (EXTB)_{ij} + \beta_{2j} (FAM)_{ij} + r_{ij}$$

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

where β_{0j} is the average age of first drug use in school *j* when FAM and EXTB are both zero. Again, the model converged in 4 iterations. Since this model is nested within the previous one, the deviance scores can be compared to assess model fit. The change in deviances was 48.20078 with 1 additional parameter estimated, which indicates that the model containing EXTB does reduce the variance in AFU. The t-ratio is significant ($t= -4.610$, $p< 0.001$) and the regression coefficient shows a strong effect (-0.281867, s.e. = 0.061147). Together these indicate that the variance explained by EXTB in the model is significant, and supports hypothesis 2.5 "*The age of first actual drug use will vary by externalizing behavior.*" The negative regression coefficient indicates that on average there is a 0.281867 of a year decrease in AFU for every standard deviation increase in EXTB ($AFU= 12.360149_j + .209997_j * FAM_{ij} - 0.281867_j * EXTB_{ij} + r_{ij}$) in school *j* after controlling for the effects of FAM. Therefore, FAM and EXTB remained in the model with a randomly varying intercept and fixed slopes.

Age of first drug use – Model-4

A fourth variable that has been shown to play a role in adolescent substance use is the sense of acceptance or bonding that the student feels with the institution. A preliminary analysis also showed student climate (SCLM) had a significant positive correlation with AFU. Student Climate is entered to the level-1 model specifically,

$$AFU_{ij} = \beta_{0j} + \beta_{1j}(EXTB)_{ij} + \beta_{2j}(FAM)_{ij} + \beta_{3j}(SCLM)_{ij} + r_{ij}$$

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

where β_{0j} is the average age of first drug use in school *j* when FAM, EXTB, and SCLM are zero. The model converged in 6 iterations. Since the two models are nested, the results of this model are compared to the previous yielding a change in deviance score of 53.61441 with one additional parameter estimated, which is significant at $p < .001$. However, the *t*-ratio for SCLM was not significant (1.271 p= 0.204), the regression coefficient was small (0.079075), while the standard error relatively large (0.062205). Together these indicate that little variance in AFU was explained by SCLM in the model. Hypothesis 2.7 "*The age of first actual drug use will vary by student climate*" was, therefore, not supported and SCLM was dropped from the model. FAM and EXTB remained highly significant and were left in the level-1 model with random intercept and fixed slopes.

Age of first drug use – Model-5

Preliminary analysis indicated that the gender variable, FEMALE (FEM), had a small but significant correlation with AFU (.096). In order to assess how FEM influences AFU holding FAM and EXTB constant, it was entered into the model at level-1. Specifically,

$$AFU_{ij} = \beta_{0j} + \beta_{1j}\,(EXTB)_{ij} + \beta_{2j}\,(FAM)_{ij} + \beta_{3j}\,(FEM)_{ij} + r_{ij}$$

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20}$$

$$\beta_{3j} = \gamma_{30}$$

where β_{0j} is the average age of first drug use in school *j* for males when FAM, EXTB, are zero. The model converged in four iterations and the change in deviance was significant ($\chi 2 = 41.91004$, *df* 1 $p < 0.001$) as was the *t*-ratio (2.511, $p < .001$). Given that females were scored 1 and males 0, the regression coefficient can be understood as an increase in AFU if the student is female. That is, β_{1j} is the adjusted mean difference between males and females in school *j* while controlling for the effects of FAM and EXTB. This suggests that females, in an average school, start drug use almost 4 months after males do, other conditions being equal ($INTERCEPT_j + 0.295063_j * FEMALE_{ij} + 0.239002_j * FAM_{ij} + -0.247136_j * EXTB_{ij} + r_{ij}$). With FEM added to the model the mean difference in AFU explained by FAM and EXTB remained significant ($t = 3.965$, $p < .001$ and $t = -3.978$, $p < .001$ respectively). Therefore, FAM, FEM, and EXTB were left in the model with a randomly varying intercept and fixed slopes.

A final step in fitting the level-1 model added SES. However, SES did not explain any significant variance in AFU and was dropped from the model. As a result hypothesis 2.3 "*The age of first actual drug use will vary by SES*" was not supported. Complete level-1 estimates can be seen in Table 4.8.

Table 4.8 Estimates for Models

Fixed Effects	NULL Model (s.e.)	Model-1 (s.e.)	Model-2 (s.e.)
INTERCPT	12.2799**(0.1615)	12.3344** (0.1579)	12.3601**(0.1572)
FAM (B1)		0.2934**(0.0571)	0.2100**(0.0600)
EXTB (B2)			-0.2819**(0.0611)
PDRG (B3)			
STDCL (B4)			
FEMALE (B5)			
SES (B6)			
MSES (G01)			
Variance Component			
Intercpt V(U0)	0.31704	0.30023	0.29774
FAM V(U1)			
level -1 V(R)	4.95943	4.83112	4.73022
ICC	0.0601	0.0585	0.0592
Model Fit			
Reliability (B0)	0.869	0.862	0.863
Reliability (B1)			
Deviance	6749.60168	6455.7427	6407.5419
Deviance Change		293.86	48.2
df	3	4	5

Table 4.8 Estimates for Models (continued)

Fixed Effects	Model-3 (s.e.)	Model-4 (s.e.)	Model-5 (s.e.)
INTERCPT	12.3547 **(0.1580)	12.3625**(0.1542)	12.2044**(0.1665)
FAM (B1)	0.2400**(0.0705)	0.1973*(0.0817)	0.2390**(0.060275)
EXTB (B2)	-0.3138**(0.0654)	-0.2637**(0.0678)	-0.2471**(0.0621)
PDRG (B3)	-0.1092 (0.0731)		
STDCL (B4)		0.0791 (0.0568)	
FEMALE (B5)			0.2951**(0.1175)
SES (B6)			
MSES (G01)			
Variance Component			
Intercpt V(U0)	0.28338	0.27497	0.28495
FAM V(U1)			
level -1 V(R)	4.74899	4.73912	4.69343
ICC	0.0563	0.0548	0.0572
Model Fit			
Reliability (B0)	0.854	0.852	0.858
Reliability (B1)			
Deviance	6280.543244[a]	6353.927484[a]	6360.631849[a]
Deviance Change	127	53.61	46.91
df	6	6	6

Table 4.8 Estimates for Models (continued)

Fixed Effects	Model-6 (s.e.)	Model-7 (s.e.)	Model-8 (s.e.)
INTERCPT	12.2049**(0.1619)	12.1967**(0.1655)	12.2032**(0.0960)
FAM (B1)	0.2350**(0.0607)	0.2541**(0.0824)	0.2497*(0.0833)
EXTB (B2)	-0.2499**(0.0624)	-0.2297**(0.0622)	-0.2216**(0.0621)
PDRG (B3)			
STDCL (B4)			
FEMALE (B5)	0.2993*(0.1186)	0.3031*(0.1172)	0.2928*(0.1168)
SES (B6)	-0.0461 (0.0692)		
MSES (G01)			-0.2525**(00.0350)
Variance Component			
Intercpt V(U0)	0.2626	0.28087	0.02653
FAM V(U1)		0.0434	0.04596
level -1 V(R)	4.67309	4.65072	4.64926
ICC	0.0532		
Model Fit			
Reliability (B0)	0.846	0.855	0.362
Reliability (B1)		0.489	0.503
Deviance	6254.34961	6356.868	6335.7095
Deviance Change	106.282242	3.76388	21.15843
df	7	8	9

Note: Coefficients and standard errors have been rounded to nearest ten thousandth

[a]Change in deviance calculated from model-3

** p<.01 * p<.05

Before leaving the level-1 models, one other interesting point is that FEM, SES, and SCLM were all significantly related to the AFU in the OLS regression model, but only FEM maintains the significant relationship in the multilevel model. Raudenbush and Bryk (2002) attribute the differences between estimates as coming from three common errors: aggregation bias, misestimated standard errors, and heterogeneity of regression. An in-depth discussion of these three common errors is beyond the scope of this

dissertation. However, these findings illustrate the importance of using a model that accounts for the nested design of the data, even when the between school variability is small. More will be said about this in the discussion section of this dissertation.

Age of first drug use – Model-6

Next, a random coefficients model was specified in order to guide the final development of the level-1 equation and to provide statistics for subsequent level-2 model building. As a first step in this process, all three slopes were allowed to vary randomly. The model converged after 450 iterations. The model comparison test of the variance covariance components revealed a poor overall model fit ($\chi 2 = 0.91545$, *df* 9 $p >$ .500). The univariate $\chi 2$ tests of homogeneity of variance for the β_{qj} coefficients showed that only FAM had significant variation among schools ($\chi 2 = 24.14005$, *df* 13 $p < 0.03$), although the variance component indicated that after freeing the slope to vary across schools, little variance remained to be explained (Var = 0.03678). The fixed effects for EXTB, FAM, and FEM continued to be significant ($t = -3.340$, $p = 0.006$, $t = 3.210$ $p = 0.007$, and $t = 2.548$ $p = 0.025$ respectively). Since the $\chi 2$ tests of homogeneity of variance for FEM and EXTB indicated non significant variability, the random effects for FEM and EXTB were again set to 0 and the model was rerun with only a random intercept and a randomly varying slope for FAM. Specifically the new model is represented as,

$$AFU_{ij} = \beta_{0j} + \beta_{1j} (EXTB)_{ij} + \beta_{2j} (FAM)_{ij} + \beta_{3j} (FEM)_{ij} + r_{ij}$$

$$\beta_{0j} = \gamma_{00} + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20} + u_{2j}$$

$$\beta_{3j} = \gamma_{30}$$

This new model converged in only 8 iterations. The t-ratios for the predictors were all significant at the $p < .001$ level, however, the test for model comparison yielded a non-significant chi square ($\chi 2 = 2.94049$, *df* 2 $p < 0.228$). Tau (as correlations) were unimpressionable (-0.028) indicating that the lack of significant variance indicated by the likelihood ratio test was not a result of multicollinearity.

The model reliability statistics provide additional guidance on appropriate specification of level-1 regression coefficients (i.e., as fixed, random, or non-randomly varying) by indicating how much of the observed variation in the estimated slope is potentially explainable. Raudenbush and Bryk (2002) suggest that whenever the reliability of a regression coefficient drops below .05 it is recommended to specify it as either fixed or non-randomly varying. In the present model, the reliability of estimated β_{2j} is a relatively robust .489, lending support to a model with a random coefficient. One other insight that can be drawn from these results is in regard to the ability of the model to detect a structural effect in the data. The strong reliability estimate for the intercept (0.855) suggests good power to detect the effects of school characteristics on AFU. Likewise, the moderate reliability estimate of FAM (.489) suggest that inferring how school characteristics might influence AFU for students with differing levels of family attention is also reasonable, although this must be viewed with some caution.

Models that allow a regression coefficient to vary randomly often suffer from instability, which is generally reflected in a decrease in the precision of the individual

parameters (Kreft & de Leeuw, 1998). However, in the present model the coefficients and their standard errors remain relatively unchanged (compare models 5 and 6 in Table 4.8). This also lends support for leaving the random coefficient in the model.

A range of plausible values with 95% confidence intervals can be calculated for the random slope estimate. Thus for this data school means (β_{0j}) would be expected in the range of (11.1592, 13.23541), and the differentiation effect of FAM (β_{2j}) in the range of (-0.15421, 0.662432). These results suggest moderate variation among schools on the FAM effect, and we would expect to find some schools where family attention effects are negligible since values near zero are plausible for β_{2j}. Visual inspection of the graph of AFU regressed on FAM shows that slopes vary considerable among schools with FAM having negligible effects in some schools and very strong positive effects in others (see figure 4.1).

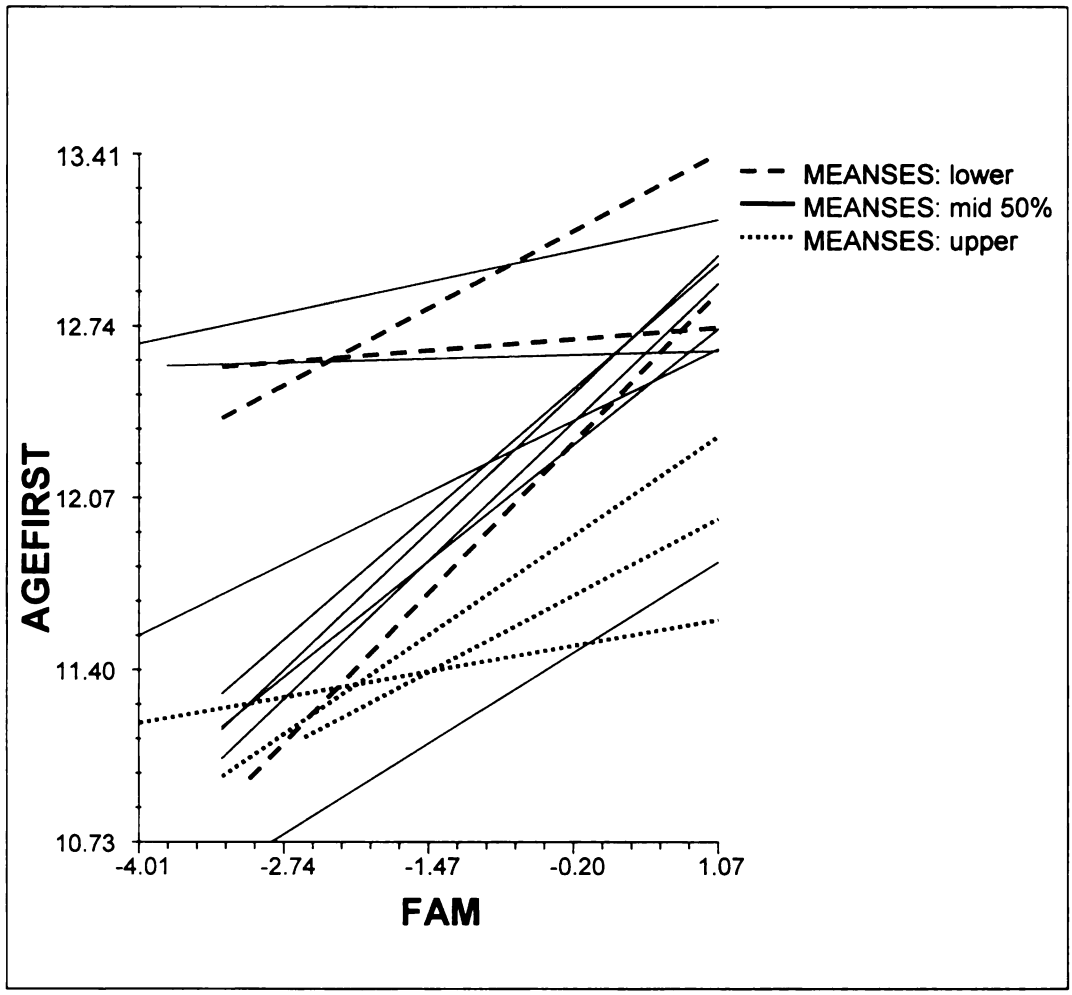

Figure 4.1. FAM random slopes by AFU identified by MSES.

Together these statistics suggest that while the specification of β_{2j} as random cannot be firmly determined empirically, there is sufficient evidence to leave it in the model unless theory indicates otherwise. Moreover, Raudenbush and Bryk (2002) point out that the likelihood ratio statistic for the null hypothesis that one or more variance components is null tends to be conservative when the number of groups is small, and thus decreases the chances of rejecting a false null hypothesis. Now a brief discussion will be given regarding the theoretical rationale for allowing the FAM coefficient to vary randomly.

Theoretically, we would expect to see family interaction vary across schools for several reasons. First, in Venezuela, students must apply (compete) for openings "cupos" at both private and public institutions from kindergarten through high school. Schools with better academic reputations are often in a position to deny admittance to students whose families do not respond to the administration's requirements, or whose guardians are not diligent in seeking out these "cupos" in a timely fashion. This would have the effect of creating a school specific characteristic that has the potential to influence aspects of family attention. Second, at least three of our schools were religious, and another was a nonreligious private institution with foreign funding that strongly encourages communication between the school and guardians of the minor students. With the addition of these characteristics, it is reasonable to expect that family attention could vary differentially among schools. Third, Hirchi's theory of institutional bonding (1969) suggests that students do attach to institutions and that this attachment has the potential to moderate the effects of FAM.

In conclusion, while there is not enough between school variance in β_{2j} to model how differing school characteristics might affect the way FAM varies among schools, both empirically and theoretically it seems that allowing β_{2j} to vary randomly is plausible, if not warranted. The evidence provided by *t* ratios, the τ_{qq} point estimates, the $\chi 2$ test of homogeneity, and the reliability estimates indicate that there is enough variation among schools in β_{2j} to treat it, at least initially, as random. Therefore, it was decided to leave the random coefficient in the model and proceed to model the variability in the intercept.

Age of first drug use – Model-7

In preparation for adding predictors to level-2, an analysis was run in HLM 6.02 to determine potential level-2 predictors. These results found that MSES (t = -6.348), PUBLIC (t = 3.118), MSCHCON (t=3.328), and MSCLM (t=-3.885) held good potential to explain level-2 variance in the intercept. Clearly, MSES is the strongest candidate to explain the between school variance in the intercept. Theoretically, MSES contains more precise information than PUBLIC since the difference between public and private schools is usually a proxy for some other characteristic such as SES. MCOND is a composite score derived from the MAMBI that describes the physical condition of the school. A descriptive analysis revealed that students with very low SES are at times in very well maintained schools due to external funding sources. This is the case with one non-religious private school in the sample that was founded by interests from the U.S. as part of an international outreach effort to benefit underprivileged children in several third-world nations. Therefore, both empirically and theoretically MSES seemed to be the best choice to begin modeling at level-2.

MSES was added to the second level intercept grand mean centered with the FAM slope varying randomly and EXTB and FEM constrained to 0. Specifically the new model is,

$$AFU_{ij} = \beta_{0j} + \beta_{1j} (EXTB)_{ij} + \beta_{2j} (FAM)_{ij} + \beta_{3j} (FEM)_{ij} + r_{ij}$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01} (MSES_{.j} - MSES..)_{j} + u_{0j}$$

$$\beta_{1j} = \gamma_{10}$$

$$\beta_{2j} = \gamma_{20} + u_{2j}$$

$$\beta_{3j} = \gamma_{30}$$

where β_{0j} is the intercept, γ_{01} is the effect of MSES on β_{0j}. While u_{0j} had been the deviation of school j's mean from the grand mean, it now represent the residual $\beta_{0j} - \gamma_{00} - \gamma_{01} (MSES_{.j} - MSES..)_{j}$, and τ_{00} is the variance in β_{0j} after controlling for MSES. The combined model can be expressed as,

$$AFU_{ij} = \gamma_{00} + \gamma_{01} (MSES_{.j} - MSES..)_{j} + \gamma_{10} (EXTB)_{ij} + \gamma_{20} (FAM)_{ij} + \gamma_{30} (FEM)_{ij} + u_{0j} + u_{2j} + r_{ij}$$

The model converged after only 12 iterations, which in itself is an indication of a well fitting model. We first see that the fixed effects show MSES is negatively related to AFU (estimated $\gamma_{01} = -0.252506$, $t = -7.219$). The $\chi 2$ likelihood ratio test shows that the change in deviance with one additional parameter estimated is significant ($\chi 2 = 21.15843$, $p < .001$) and the model is a good fit. The variance component has been reduced from 0.28087 in the previous model to 0.02653 ($\chi 2 = 21.32558$, $p < .045$) indicating that MSES has accounted for approximately 90% of the available variance to be explained in the intercept. The negative coefficient of MSES indicates that a one standard deviation

increase in the average SES of school j decreases AFU by approximately .25 years, or 3 months after accounting for the effects of EXTB, FAM, and FEM [AFU_{ij} = 12.203181 + -0.252506* ($MSES_{.j}$ –$MSES..)_j$ + -0.221641*$(EXTB)_{ij}$ + 0.249663*$(FAM)_{ij}$ + 0.292807*$(FEM)_{ij}$]. Since the level-1 predictors are standardized with a mean of 0 and a standard deviation of 1, and the gender variable is binary with males having a score of 0, one standard deviation increase MSES lowers the age of onset (the intercept) in an average school by approximately 4 months for male students in a family with average attention and manifesting average externalizing behavior. Based on this equation we can conclude that the earliest predicted age of first drug use is for a male student with low family attention and high externalizing behavior in a school where students, on average, are high SES.

The following graphs illustrate this relationship. In figure 4.2, the slopes represent the positive linear relationship between AFU and FAM with increases in FAM related to increases in AFU. The first line (from the bottom up) represents males with high externalizing behavior. The next lines represents females with high externalizing behavior; followed again by males with low externalizing behavior; and finally by females with low externalizing behavior. We see that while holding the effects of FAM constant, EXTB seems to influence AFU equally for males and females. Likewise, this graph illustrates that students with high EXTB initiate drug use earlier than students with low EXTB regardless of gender.

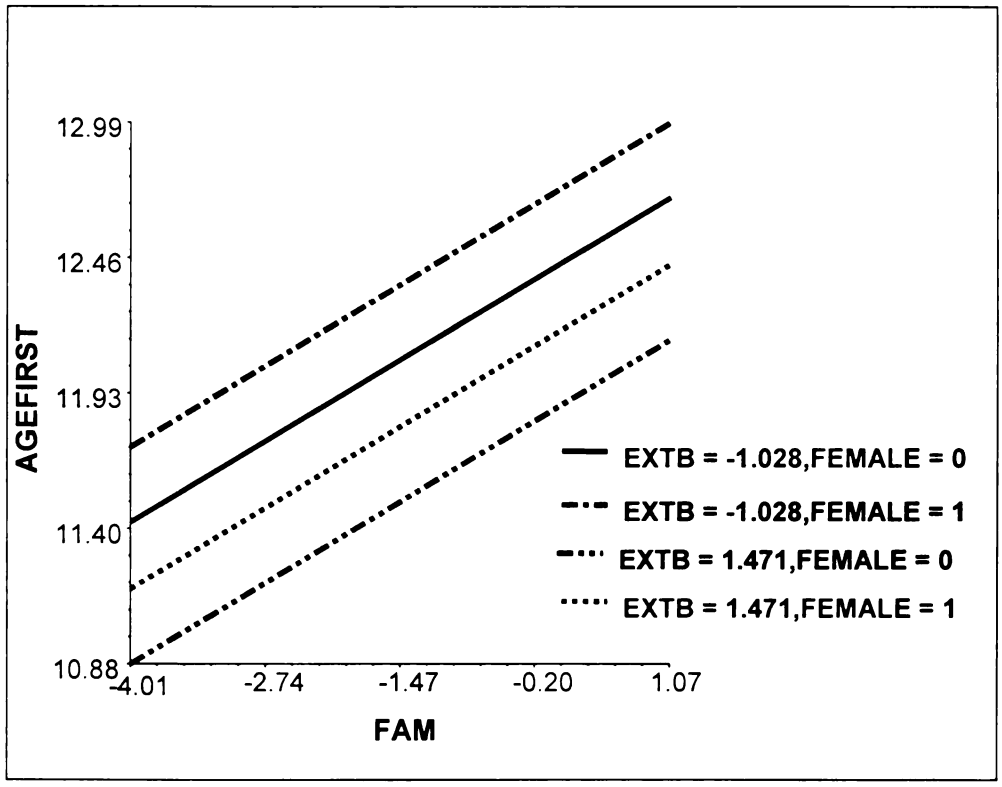

Figure 4.2. The joint relationship of EXTB and FEM on AFU holding FAM constant.

The following graph (Figure 4.3) offers roughly the same picture as the previous one with approximately the same interpretation. Here the slopes represent the negative linear relationship between AFU and EXTB with increases in EXTB related to decreases in AFU. The first line (from the bottom up) represents males with low family attention. The next lines represents females with low family attention; followed again by males with high FAM; and finally by females with high FAM. Again, we see that while holding the effects of EXTB constant, FAM seems to influence AFU in the same way for males and females. That is, students with low FAM initiate drug use earlier than students with high FAM, regardless of gender.

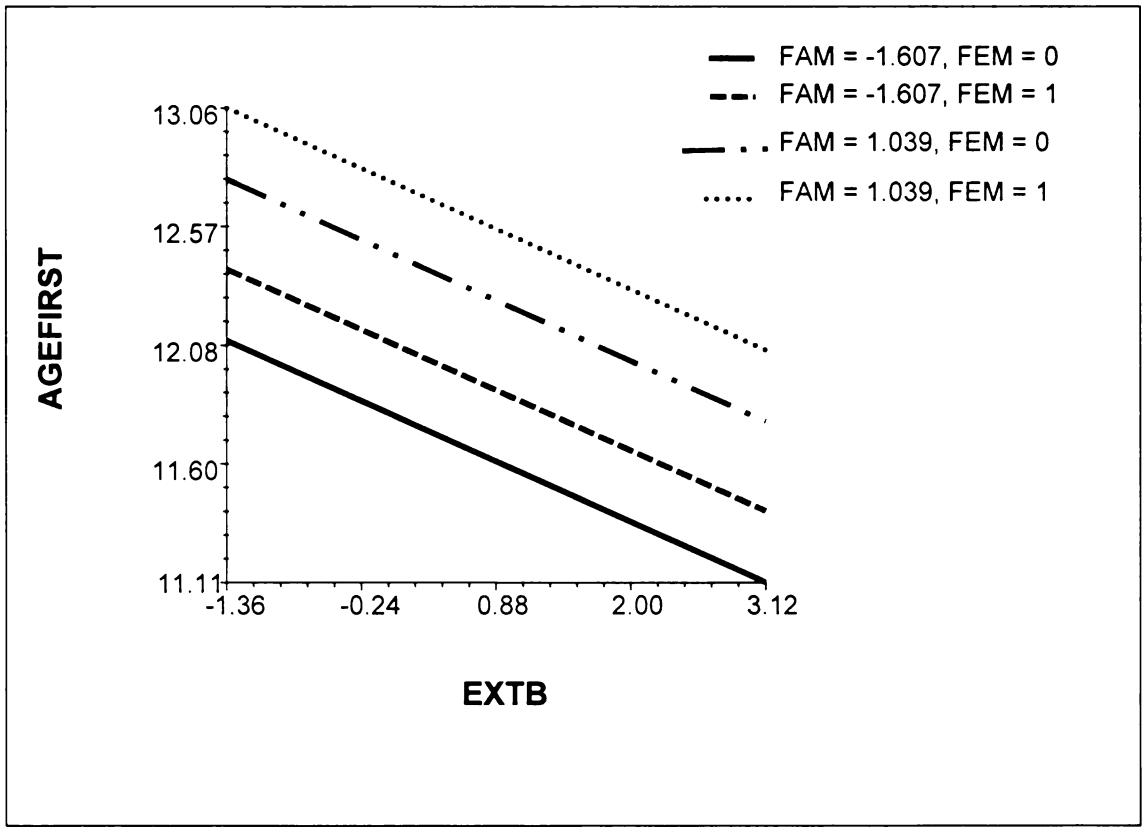

Figure 4.3. The joint relationship of FAM and FEM on AFU holding EXTB constant.

The next graph (Figure 4.4) offers a slightly different picture by comparing the effects of FAM and EXTB together on males and females. Here again the data seem to suggest that the effects FAM and EXTB have on AFU are nearly the same for both groups, albeit with differing intercepts. Starting from left to right for males (0.00), the first bar indicates that low FAM and low EXTB are about the same as the high FAM and high EXTB (last bar in 0.00 group). And, the proportion of this relationship seems to hold among females but with higher intercept values (see first bar compared to last bar in 1.00 group). For both males and females the earliest age of first onset is when there exists low FAM and high EXTB (second bar in both groups), the latest age of first onset is when there is high FAM and low EXTB (third bar in both groups). The relative effects of FAM and EXTB seem to be equal across gender. This graph also suggests an additive effect between FAM and EXTB. For both males and females, the effects of FAM and EXTB seem to either cancel each other out creating a mid-range effect (i.e., high FAM – high EXTB, low FAM – low EXTB), or they accentuate each other creating either strong negative or strong positive movement in AFU (i.e., high FAM – low EXTB, or low FAM – high EXTB). And this effect is the same across genders.

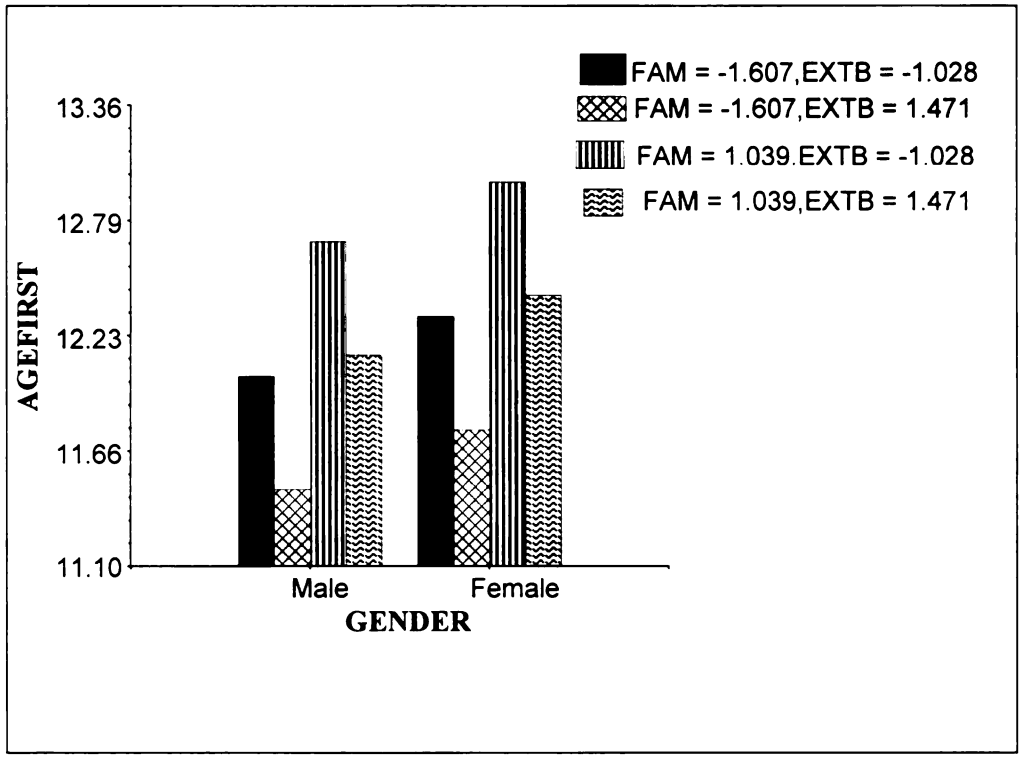

Figure 4.4. The joint relationship of FAM and EXTB on AFU by gender.

In figure 4.5 the second level effects are introduced. Here the first line (from the bottom up) represents students with high externalizing behavior that attend high SES schools while holding family attention constant. However, the next line represents low externalizing behavior and high SES schools holding FAM constant. The third line in the graph again represents high externalizing behavior and low school-level SES, but has a considerably later age of onset then the low externalizing behavior/high SES relationship. The fourth line represents low EXTB and low MSES while holding FAM constant. This graph shows a cross-level interaction where externalizing behavior is being moderated by school-level SES. That is, the impact of the relationship of EXTB on AFU depends on the normative environment in a school as characterized by MSES. This is a particularly interesting finding since individual-level or level-1 SES was not a significant predictor of age of first drug use (see table 4.8). That is, the disposable resources available to a student on a personal level do not seem to be related to her or his age of first drug use. However, the normative environment as characterized by a school level mean SES is negatively related to age of first drug use, and moderates the effects of EXTB.

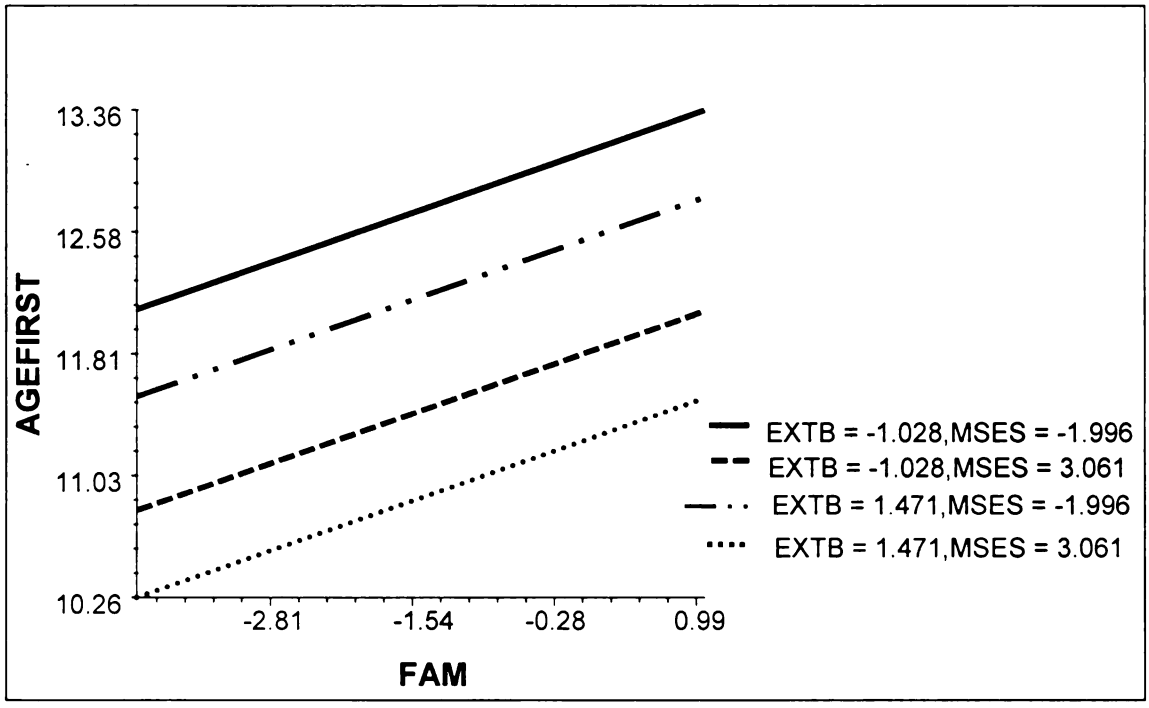

Figure 4.5. The cross-level interaction effects of EXTB by MSES on AFU holding FAM constant.

As in the previous graph, figure 4.6 illustrates a cross level moderation of MSES on FAM in school *J*. Again, the first line (from the bottom up) represents low FAM at level-1 in school *J,* and high MSES measured at the school level while holding EXTB constant. However, one would expect that the next line will be low-FAM, low-MSES if the family variable were exacting the stronger effect on AFU. Instead, the second line is high FAM – high MSES, which again indicates the cross-level interaction that moderates the relationship between FAM and AFU.

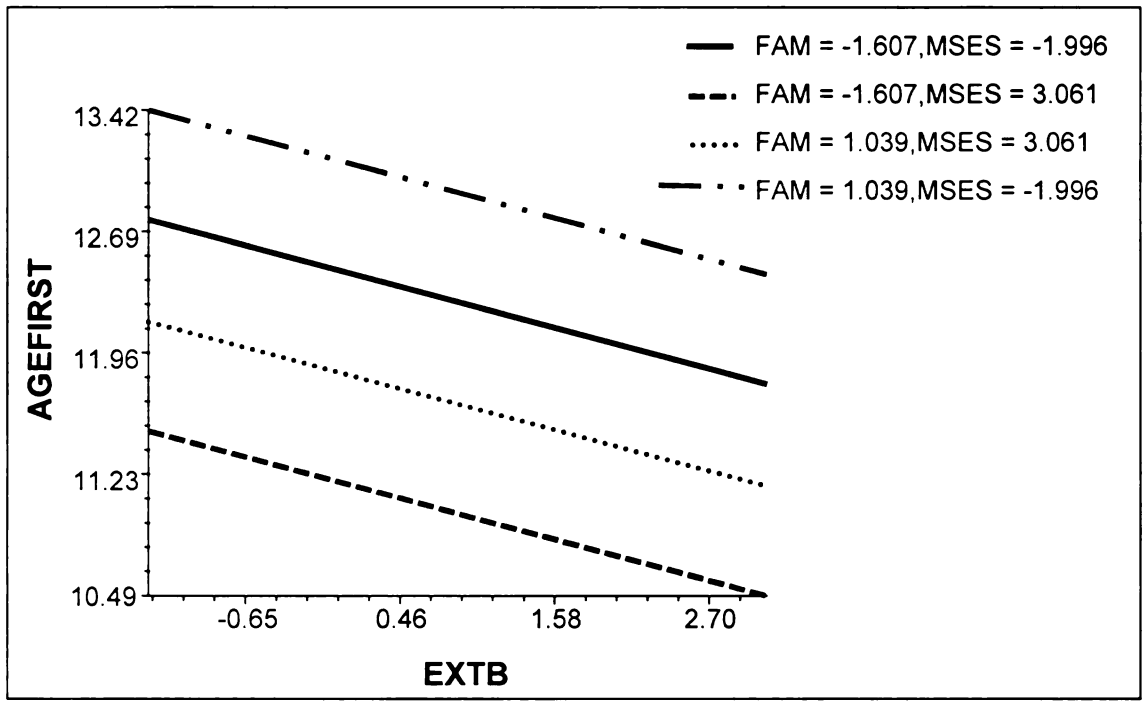

Figure 4.6. The cross-level interaction effects of FAM by MSES on AFU holding EXTB constant.

Figure 4.7 demonstrates the effect of MSES on gender. Here the first line (from the bottom up) as we have seen represents males from schools with high average SES scores holding constant FAM. The next line represents females from high average SES. However, the male and female lines in the high MSES are relatively close together, as are the lines in the low MSES schools. This indicates a grouping effect in AFU that tends to erase the differences between males and females. This becomes increasingly obvious by the larger jump in AFU that seems related to difference between high and low MSES (i.e., compare the difference between lines 1 and 2, to the difference between lines 2 and 3). Thus, it seems that school-level SES seems to have a strong equalizing effect for males and females in determining age of first substance use.

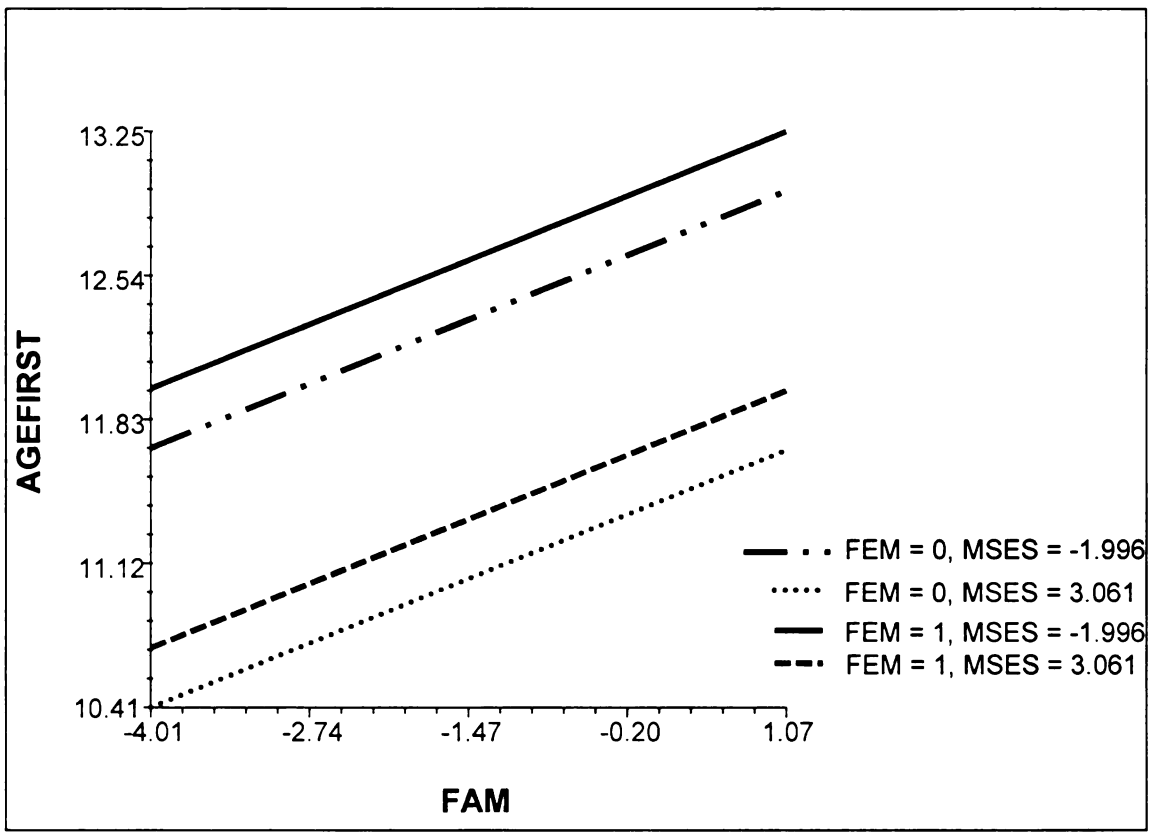

Figure 4.7. The cross-level interaction effects of FEM by MSES on AFU holding FAM constant.

Having added MSES as a level-2 covariate, the explainable variance in the intercept seems to be depleted to a negligible amount and since MSES was determined theoretically to be the most salient level-2 covariate, no other level-2 variables are added to the model. Likewise, the meager remaining variance to be explained in FAM suggests that the model is at peak balance between parsimony and fit. Therefore, the study now turns to diagnostics in order to assess the adequacy of the model.

Age of First Drug Use – Model Diagnostics

With a tentative model developed, an essential part of model building is determining the adequacy of the model by assessing if the assumptions of the model appear valid for the data. Two of the more important assumptions are: (a) that the level-1 errors are independent and normally distributed with a mean of zero; and (b) that the random effects are normally distributed with a mean of zero, and are independent across groups. These assumptions were tested empirically using the level- 1 and level-2 residuals produced by HLM 6 during the modeling process. Level-1 residuals are examined first.

A boxplot of the within school residuals can be used to determine if the residuals are centered at 0, and that the variances are constant across groups. Figure 4.8 shows that the residuals seem to be centered at 0, albeit with a small amount of variability, and that the variability appears to be fairly constant across schools. The several data points that appear to be outliers are students who reported very early ages of first drug use (e.g., 4 years of age). This was discussed in chapter 3, and the theoretical rationale for leaving these observations in the data set was given. Increasingly early onset of drug use is

becoming a phenomena common to many countries (United Nations General Assembly Special Session on the World Drug Problem, 1998) and therefore argues more for their inclusion than to viewing them as outliers.

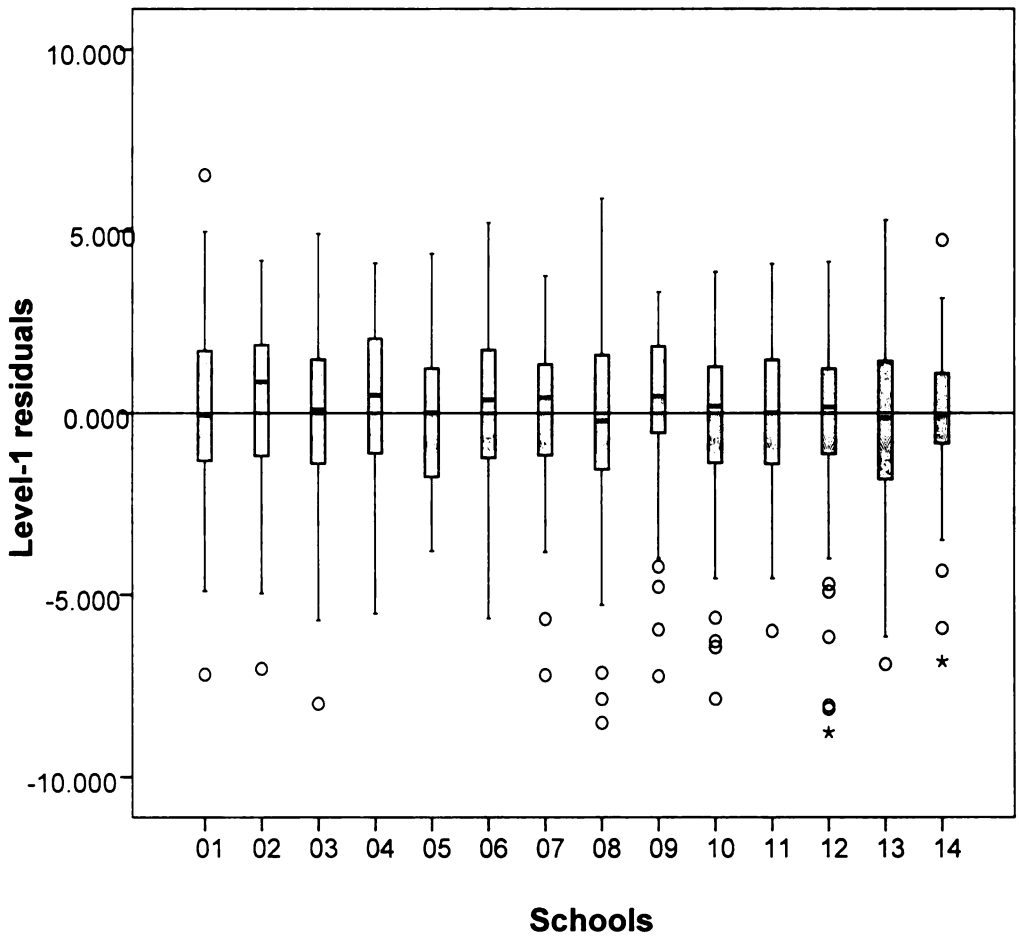

Figure 4.8. Box plot of Level-1 residuals by each of the 14 schools.

A scatterplot of the residuals against the fitted values is used to assess for problems with heteroscedasticity. Figure 4.9 shows that there are no recognizable patterns, which indicates that the assumption for heteroscedasticity is reasonably met.

Finally, a normal P-P plot of the level-1 residual is used to assess the normality assumption of the data. If data are normally distributed they will be arrayed along a straight line in the P-P plot. Figure 4.10 shows that the data for age of first drug use appear to be quite normal.

Additionally, a test of homogeneity of level-1 variance was performed to assess if the variances depend systematically as a function of level-1 or level-2 predictors. A test is provided in the HLM 6.02 software. Formally the test of homogeneity of level-1 variance is

$$H_0 = \sum d^2_j$$

where d is standardized measure of dispersion for each group j. This statistic has a large sample $\chi 2$ distribution with $J - 1$ degrees of freedom under the homogeneity hypothesis (Raudenbush & Bryk, 2002). A rejection of the null would indicate heterogeneity of the level-1 variances and may indicate a mis-specification of the level-1 model, which holds the potential to bias estimates of the level-2 coefficients. The test was not significant ($\chi 2 = 19.74179$, df 13, $p = 0.102$), so the null is retained and it is concluded that the level-1 variance does not depend on measured predictors. Having shown that the level-1 assumptions are reasonably met, level-2 assumptions are now addressed.

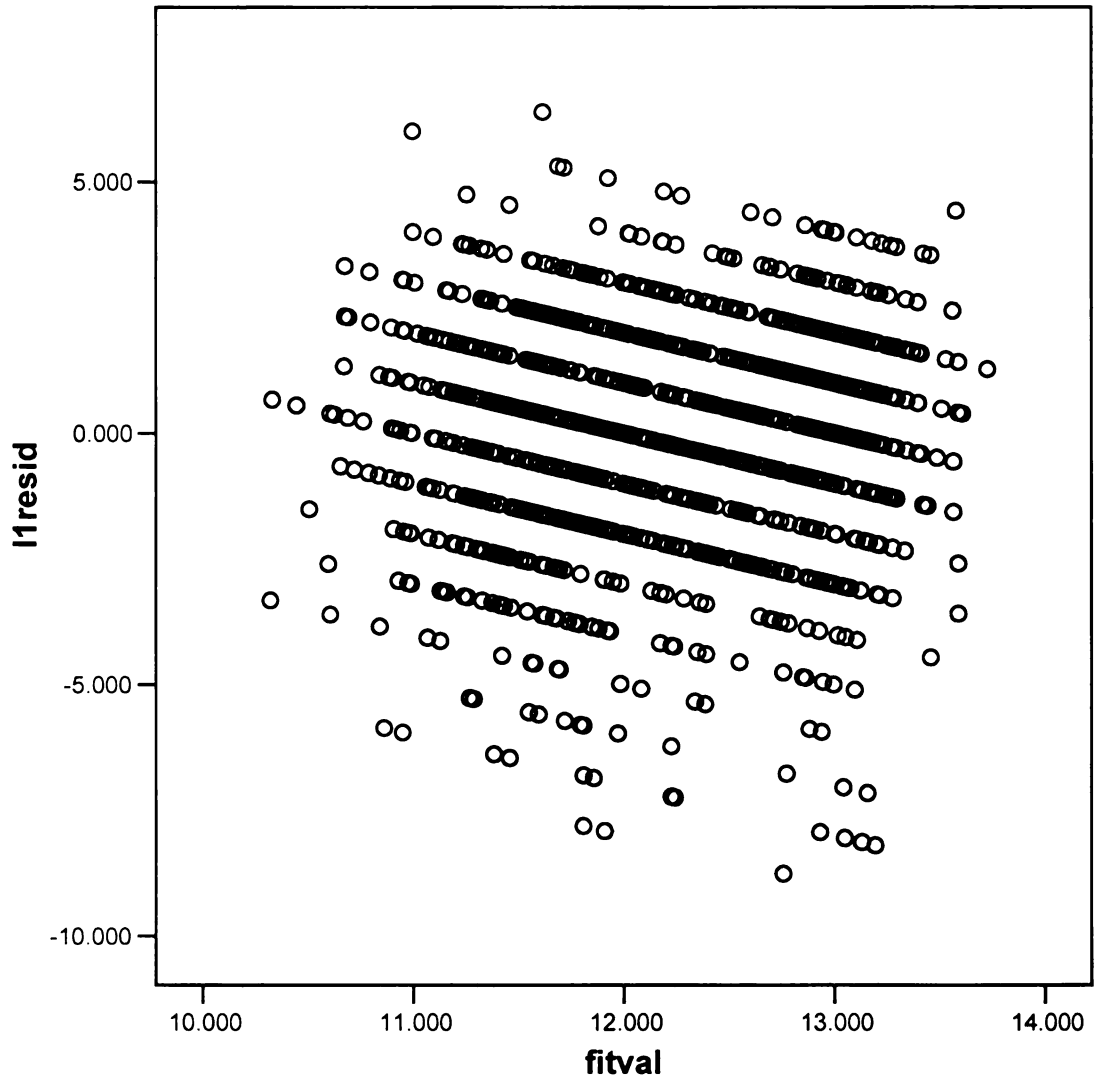

Figure 4.9. Scatterplot of level-1 residuals against the fitted values.

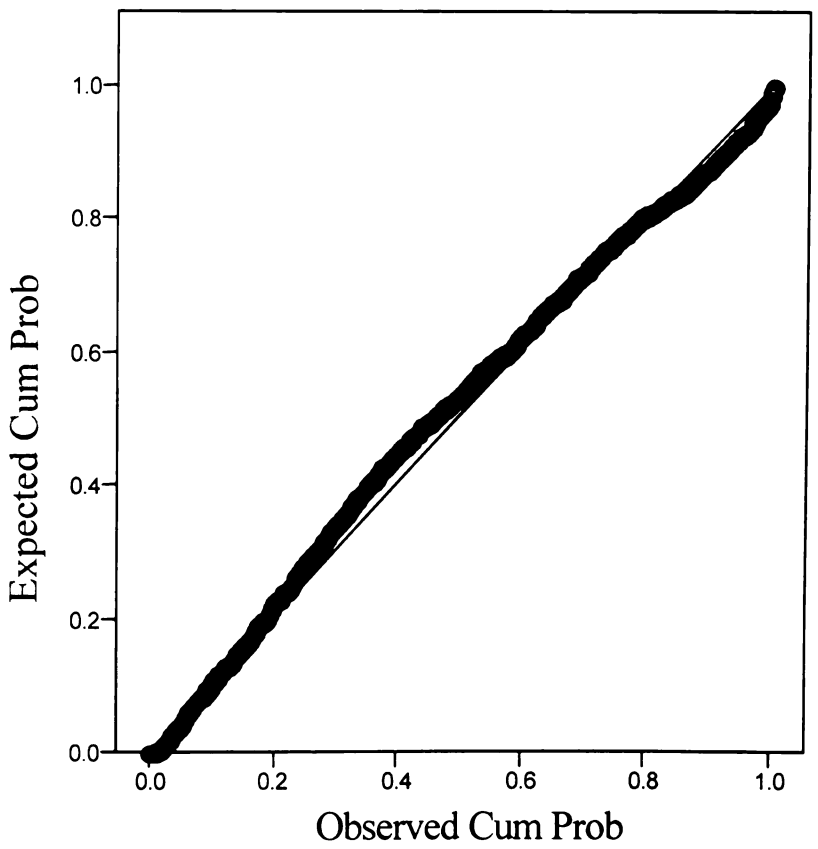

Figure 4.10. P-P plot of the level-1 residuals

A visual inspection of the *Q-Q* plot found that the Mahalanobis distances were approximately χ^2 distributed (see figure 4.11). Additionally, Mahalanobis distances were plotted against the expected values of the order statistics for a sample of size *J* schools. The constructed Q-Q plot shows that the random effects are distributed approximately *v*-variate normal (see figure 4.12). A Pearson correlation r_P between the expected and observed Mahalanobis distances was statistically significant ($r_P = 0.94, p < 0.001$). HLM is robust against violations of normality (Raudenbush & Bryk, 2002), and this assumption seems to be reasonably met. The mild divergence of several of the observations can be attributed to differing sample sizes among the 14 schools and should not be taken as evidence of a non-normal distribution. For example the sample from school 10 had n = 212, where school 9 had n = 104, clearly more than twice as large. Table 4.9 provides a list of the sample sizes within each school.

Table 4.9 Within school sample size

School	1	2	3	4	5	6	7	8	9	10	11	12	13	14
N	135	119	142	150	104	109	104	124	104	212	109	149	132	125

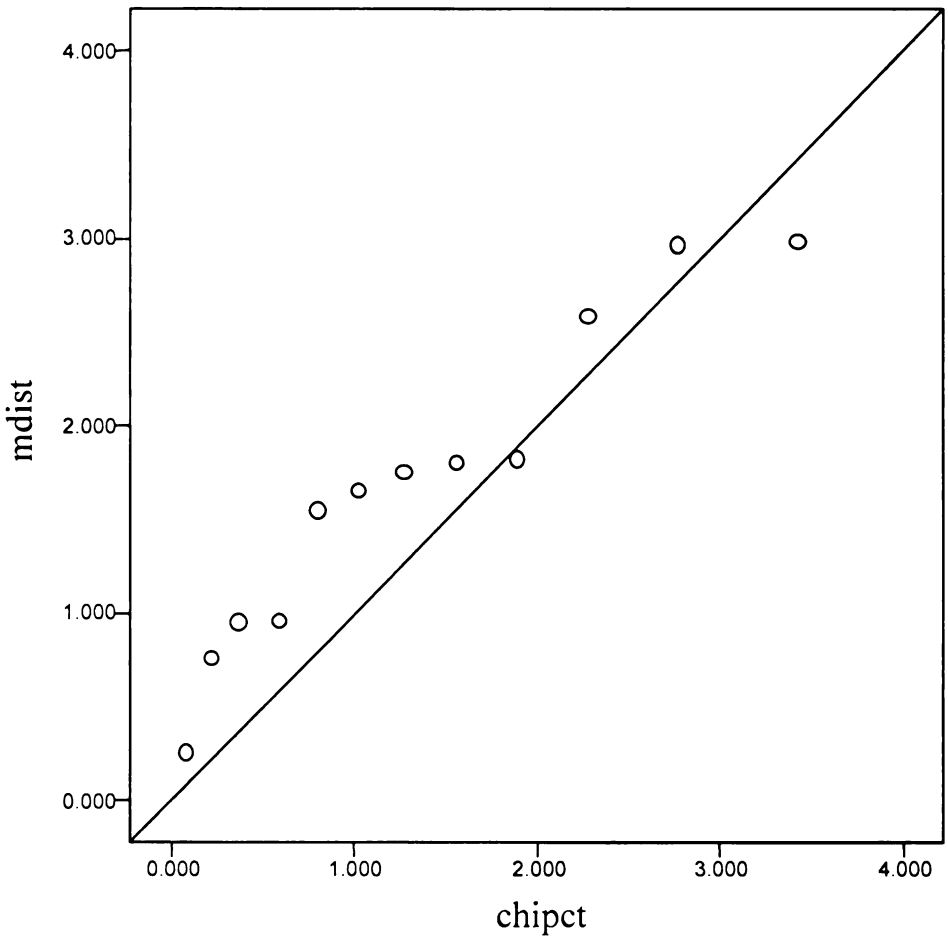

Figure 4.11. Normal Q-Q plot of Mahalanobis' Distance

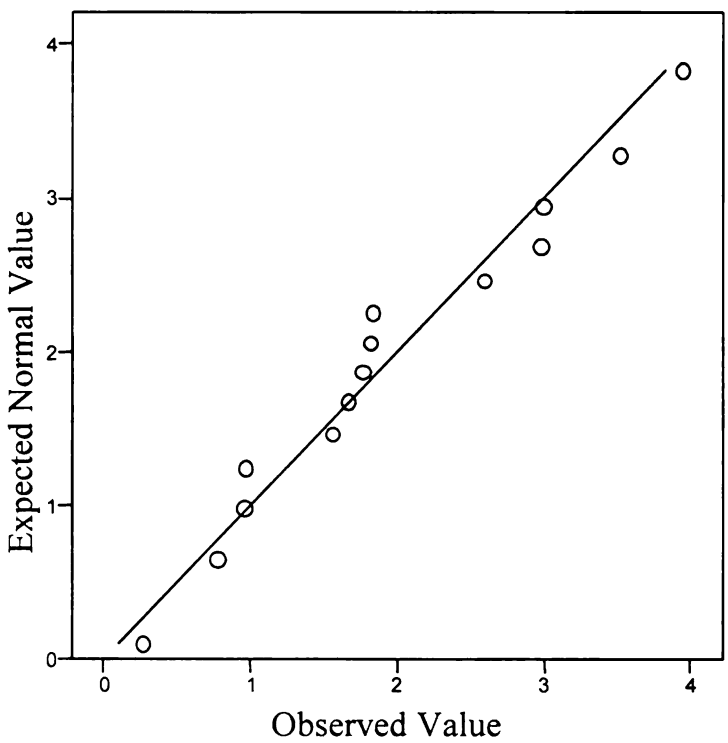

Figure 4.12 Mahalanobis' Distance by the expected values of the order statistics.

Finally, the empirical Bayes estimates of the random intercept were plotted against MSES to assess for a linear relationship between the intercept and MSES. Again, a visual inspection of the scatterplots suggests that the residuals do not follow a systematic pattern and the assumption of a linear relationship is reasonably met.

Together these tests offer evidence that the level-1 and level-2 assumptions have been reasonably met and provide confidence in the fitted model. The next chapter will provide a more in-depth discussion of the findings reported in this chapter and their implications.

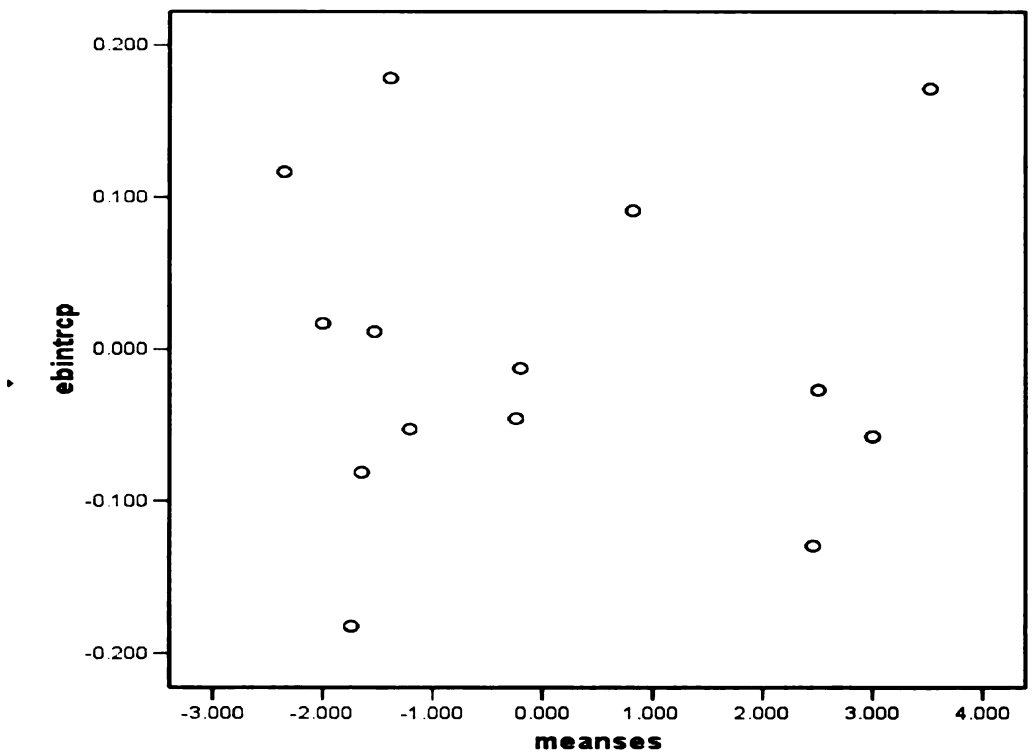

Figure 4.13. Empirical Bayes intercept estimate by MSES.

CHAPTER V: DISCUSSION

This study looked at how known risk and protective factors for adolescent substance abuse in the U.S. are present in a sample of Venezuelan school-attending adolescents. Results of a hierarchical linear model showed that family attention, externalizing behavior, and gender were significant level-1 covariates, and that mean socioeconomic status was a significant level-2 covariate. This chapter provides a discussion of the results, implications, limitations, and future research directions.

Discussion of Results

General Description of Drug Use

Overall, the sample was comprised of a relatively high number of students that had consumed alcohol (81.5%). The next highest drug consumed was cigarettes with a relatively moderate 31.5% having at least tried cigarettes. However, incidence of illicit drug use was very low ranging from .3% (crack), .4% (heroin), .9% (ecstasy), 2.5% inhalants, 3.7% (marijuana) to 8.8% (prescription pills). In comparison to their Venezuelan counterparts, adolescents age 11-19 in the U.S. report very high alcohol (98.7%), cigarette (96.2%), and marijuana (96.8%) use (SAMHSA, 2005). Additionally, according to the National Survey on Drug Use and Health (NSDUH) report the contrast of the percentages of youth who have tried other illicit drugs in the U.S. as compared to Venezuela is dramatic: crack (22.6%), heroin (9.8%), ecstasy (64.9%), and inhalants (24.1%).

Although alarming, the discordance in percentage of drug use among youth in the U.S. compared to Latin America is not surprising. Epidemiological studies have consistently reported very low levels of adolescent illicit drug use, even in areas where drug crops are commonly cultivated, produced, and subsequently exported (Vega & Gil, 1998). Other studies have found a significant positive relationship between rates of drug use for foreign-born Hispanics living in the U.S. and length of time living in the U.S. (Vega & Gil, 1998; Warheit, Vega, Khoury, Gil, & Elfenbein, 1996).

The low prevalence of illicit substance use in the sample is contrary to the general perception of many of the teachers, therapists, and parents interviewed in focus groups conducted by the author. Teachers, therapists, and parents alike decried the ubiquity of illegal substances in Caracas neighborhoods. Two possible explanations for the discrepancies between the data of the present study and qualitative reports come to mind. First, the perception of increases in any behavior is contrasted to what had been the norm and can be distressing to the observer. In a city such as Caracas where not only is the population voluminous (approximately 5,000,000 in the metropolitan area), it is also densely packed in a series of valleys among the mountains. Therefore, even slight increases may be highly visible and perceived as alarming. Second, since the sample was drawn from school-attending youth, school may function as a protective factor with the great majority of youth who engage in the consumption or trade of illicit substances dropping out of school and therefore excluded from the current measure. If the latter proves to be true, then the low prevalence of substance use among Venezuelan youth is, at least in part, an artifact of the survey methodology employed. Future research should incorporate survey methods that capture non school-attending youth in order to

understand more fully both the prevalence of substance use and the risk and protective factors that may be operating among Venezuelan youth in regards to their decisions to consume illicit substances.

Compared to use of illicit substances, higher rates of subjects reported having consumed alcohol (81.3%) and/or smoked a cigarette (31.5%) at some point. Some experimentation with licit substances such as alcohol or tobacco is considered by most to be normative and not a cause for concern (e.g., Zucker, Fitzgerald, & Moses, 1994). Moreover, in Venezuela parents often include alcohol in family functions and celebrations such as weddings, and approve of children drinking under their supervision. However, since the survey did not specify where drinking took place, nor whether or not parents were present, this finding may be an artifact of the survey design more than an indication of a cultural phenomenon. The findings also revealed that 42.9% of youth reported not having drank any alcohol in the past year, and approximately 28% reported drinking only sporadically (i.e., "every once in a great while") throughout the year. Still, almost 15% reported drinking monthly, 7.8% reported drinking weekly, and 2.4% reported drinking daily. These findings suggest that alcohol consumption may be a concern for approximately 25% of the sample. Furthermore, for the 7.8% who reported weekly drinking and the 2.4% who reported daily drinking, their level of use may have already passed into the realm of abuse, which may place them on the pathway to alcohol dependence.

Independent Variables

Family Attention

The predicted relationship between family attention (FAM) and age of first drug use (AFU) received solid support in the data analysis. Family life characterized by a lack of parental support, poor communication, increases in negative reinforcement, and poor boundary setting and monitoring has been shown to be one of the stronger covariates with the onset of a series of child misconduct problems including substance use (Belcher & Shinitzky, 1998; Gorman-Smith, Tolan, Zelli, & Huesmann, 1996; King & Chassin, 2004). In the present study increases in FAM (i.e., positive family functioning) was correlated with significant increases in age of first drug use (AFU), and this relationship was maintained even after accounting for the effects of externalizing behavior and gender.

Descriptive statistics showed that FAM (standardized to have M=0 and SD=1) was negatively skewed with a median of .34 and a mode of 1.07. The pronounced skew in FAM created a ceiling effect with the majority of participants (25%) scoring a full standard deviation above the mean. This ceiling effect is suggestive of strong positive family relationships for a significant portion of the sample, and that these relationships are associated with increased AFU for school attending youth in Venezuela. Interestingly, though, this effect varied across schools. The random slopes model showed a significant effect for FAM, and Figure 4.1 illustrated that the effects of FAM were negligible in some schools and highly significant in others. A decomposition of the graph in figure 4.1 shows that the random effect roughly follows the pattern of public vs. private with the top five most significant slopes belonging to public institutions and five of the six least

significant slopes belonging to private schools. Unfortunately, an empirical explanation for these differences is beyond the scope of this study since the restricted number of schools in the sample limited the between school variance and thus, the ability to model the FAM slope. Nevertheless, this is an important preliminary finding because it supports a contextual approach to the development of treatment and prevention strategies. For example, there may be characteristics inherent in public institutions that indicate increased emphasis on parental monitoring, or that by introducing parental monitoring earlier as opposed to later in the intervention will lead to quicker results and thus encourage families to continue with the treatment. Or, perhaps because parents are paying for their child's education in private institutions, they are more inclined to be involved with their children. While these speculations are not able to be tested using the present data, the results argue for an ecological approach that hypothesizes differential effects associated with school level variables that interact with families to influence AFU at the individual level.

The literature is replete with studies that place parental monitoring and parental support as the two primary family variables that are associated with adolescent substance use. The original PACARDO study conducted by Anthony and colleagues (2001), recognizing this pattern, combined items that assess for parental monitoring and parental involvement to create the FAM variable. The present study followed the lead of Anthony and colleagues and utilized the same approach. However, in an attempt to understand more fully the dynamics of this variable, the two scales were recreated as separate variables and entered into the multilevel regression. Interestingly, the fixed effect for parental support was highly significant while the effect for parental monitoring was not

even marginally significant ($t = 3.721, p < .001$ & $t = 1.196, p = 0.232$, respectively). These results do not necessarily suggest that parental monitoring is unimportant for Venezuelan youth, but only that parental monitoring may not be significantly associated with AFU in a cultural context that is permissive toward alcohol use by minors. Given the high incidence of alcohol use by school attending youth, and the very low occurrence of illicit drug use, when AFU is regressed on parental monitoring the majority of the variance to be modeled is among youth who have consumed alcohol. Therefore, it may be that since modest alcohol consumption is condoned by many parents, parental monitoring loses its power of association to vary significantly with AFU. However, this needs to be further explored in future studies.

Another potential explanation for this finding is a cultural mis-specification of the measurement of the parental monitoring construct. In a large urban, Latin American city such as Caracas, what parents and youth consider as monitoring may vary significantly from established criteria in the U.S. Additionally, other mechanisms employed by parents to monitor their children may have been developed in a response to a distinct context, and are not tapped by the items that make up the parental monitoring measures typical of the U.S. context. These mis-specifications would be reflected in the relationship between parental monitoring and AFU.

Furthermore, the lack of significant association between parental monitoring and AFU may be due to measurement error. Important to note is that the items used to assess for parental monitoring were used in the original PACARDO study as a component of the family attention variable and not as a stand alone scale for parental monitoring. Of the seven items that comprise the family attention variable only three of those are indicative

of parental monitoring (V16, V18, & V20). For the present data the Omega procedure yielded a reliability estimate of .56. and the Pearson correlation coefficient for the relationship between parental monitoring and parental support was a modest but significant .265 ($p < .01$). Obviously, the three items used to capture monitoring behavior among parents are not comparable to a fully developed scale that has withstood rigorous psychometric evaluation. Therefore, while intriguing, conclusions drawn from this finding would be inappropriate without further research.

Finally, Steinberg and colleagues (1995) found that the pathway of parental monitoring to adolescent drug use was mediated by peer groups, with parental monitoring influencing delinquent behavior through the choice of peers by youth. If in Venezuela peer influence is not an important covariate of AFU, a subject that will be taken up shortly, then parental monitoring would lose its significant relationship to AFU.

In conclusion, FAM covaries significantly with AFU. However, the relationship in this study seems to be through parental support more than through parental monitoring, is bound to a cultural context that is permissive to alcohol consumption among youth, and is moderated by a school context. Again, these findings support the importance of culturally adapted ecological approaches to treatment and prevention interventions in order to increase the effectiveness of the interventions and meet the differing needs of families in distinct contexts. These findings are important areas of investigation in future studies.

Externalizing Behavior

Research has continuously shown a strong link between EXTB and substance use (e.g., Clark & Winters, 2002). The results of the present study involving Venezuelan

adolescents agree with previous research and support the hypothesis that externalizing behavior (EXTB) is significantly related to AFU, such that as EXTB increased AFU decreased. Additionally, research on youth from the U.S. suggests that EXTB is significantly correlated with negative family relationships (Capaldi, DeGarmo, Patterson, & Forgatch, 2002). Parents that engage in higher levels of antisocial behavior, tend to also manifest aggression toward each other, to be less consistent in their discipline, and use more coercive behavior with their offspring, which in turn leads to a failure to inhibit youthful EXTB (Capaldi, et al., 2002). The present study on Venezuelan youth also found a significant negative correlation between FAM and EXTB ($r = -.362$, $p < .001$). Youth with higher levels of EXTB are in families who exhibit lower levels of FAM. While causality cannot be inferred from the present findings, they do corroborate results from U.S. studies on substance using youth and lend initial support for the implementation of family-based treatment and prevention strategies in Venezuela.

Beyond the association between EXTB and initiation of substance use, if left unaddressed, EXTB may develop into a conduct disorder (CD). Furthermore, in a longitudinal study by Sartor and colleagues (Sartor, Lynskey, Heath, Jacob, & True, 2007), CD was shown to be the only risk factor assessed that covaried both with alcohol initiation and progression from first drink to a later alcohol disorder. These researchers go on to report that the role of CD in the development of alcohol disorder is most probably through involvement with other deviant peers, who reinforce drinking and other antisocial behaviors. Peer influences were also significantly correlated with EXTB and FAM in the present study ($r = .383$, $p < .001$, and $r = -.315$, $p < .001$ respectively). These findings again echo what Steinberg (1995) and others (e.g., Capaldi, et al., 2002; Liddle

& Dakof, 1995; Szapocznik & Coatsworth, 1999; Szapocznik & Williams, 2000) who draw from human ecology theory have proposed that microsystemic interactions more than a single causal agent should be considered when developing strategies to interrupt problem behavior.

While the form of these strategies, their timing in delivery, and other factors may differ across cultures, it appears that the interaction between family, peers, and antisocial behavior, and the influence these play in the onset of substance use are constant from U.S. to Venezuelan culture.

Peer Drug Influence

Although research in the U.S. has consistently shown that youth whose peers use drugs will also tend to use drugs, this relationship was not supported in the current study. The multilevel model revealed a mild negative fixed effect for peer drug influence (PDRG) on AFU that was non-significant. Several potential explanations may shed light on these findings.

First, in Venezuela, as is true in other Latin American countries (Vega & Gil, 1998), there is a strong societal prohibition against illicit drug use. This cultural attitude toward illicit drug use may create a protective factor that helps youth find greater amounts of peers that do not use drugs by making open declarations of drug use among peers who do use less common. In U.S. schools multiple subcultures are openly formed and youth attach themselves to one or another (e.g., the "jocks," the "burnouts," the "druggies," or the "brains"). This process is often influenced by environmental mechanisms. For example, the study by Steinberg and colleagues (1995) mentioned earlier in this dissertation, pointed out how parental involvement interacted with

adolescent subcultures formed on the lines of ethnicity. This study revealed, for instance, that even though African American parents scored consistently high in parental involvement, it was difficult for African American youth to break into the "brains" subgroup. In Venezuela, it may be that the peer subculture that uses illicit drugs is ostracized and leave school, and therefore was not represented in the sample. Interestingly, this same pressure does not seem to occur with cigarettes or alcohol.

Second, as a result of the societal pressure not to become involved with illicit drugs, it may be that in Latin America peer influences are more of a protective factor that buffer against the opportunities to become involved with illicit drugs. Differential effects of peer groups by culture have been found by at least one other research team. In a longitudinal study, Apospori and colleagues (Apospori, Vega, Zimmerman, Warheit, & Gil, 1995) found that while peer group associations were linked with early drug experimentation for White non-Hispanics, they functioned as a protective factor against early experimentation for African American youth. Equally intriguing is that they found that this effect waned over time due to changing perceptions and levels of tolerance toward deviant peers. Interestingly, comparing the correlations between PDRG with age of first illicit drug use and PDRG with AFU, reveals that there is a significant negative correlation between PDRG and age of first illicit drug use ($r = -.357$, $p < .001$), and only a meager non-significant correlation between PDRG and AFU ($r = .017$). If one accepts the premise that alcohol is a culturally accepted substance then this suggests a cross-level moderation effect between type of drug (i.e., culturally accepted) and how peer influence functions (i.e., as a protective factor or a risk factor).

Third, as was mentioned earlier, the influence of deviant peers on AFU may be reduced in Venezuela simply due to attrition. Approximately 68% of youth who start school in Venezuela do not finish high school (Mundó, 2003). While no empirical data that linked drop-out rates to substance use for Venezuela was found, it seems plausible to assume that youth who become involved with the consumption or trafficking of illicit drugs may drop out of school at increasingly greater rates than those who choose not to become involved.

The absence of a significant link between PDRG and AFU among this sample of Venezuelan youth supports the line of reasoning that cultural influences are a vital consideration when developing treatment and prevention interventions. For school attending youth in Venezuela, PDRG may not be a central concern and energies may be focused on other areas. Still, further research is needed to validate this finding, and if replicated, to ferret out the mechanism that may be at work that insulate youth against the influence of peers that use illicit substances.

School Climate

The predicted relationship between school climate (SCLM) and AFU was not significant in the model. School climate that allows youth to form an attachment to the institution has been shown to serve a protective function for youth in U.S. schools. School attachment has been defined in the literature as a sense of affection toward and enjoyment of school (Hill & Werner, 2006) or as a basic expression of the human need to fit in (Anderman, 2002). Most schools in the U.S. have clubs, sports activities, and other extracurricular functions that allow students to become involved, and which in turn create a sense of belonging and acceptance. However, this was not the case in the present study.

Only half of the schools were reported to have any extracurricular activities. Just under half of the students (48.6%) felt that their teachers were genuinely interested in their well being; 56% reported that the majority of the time they do not do their homework; 30% reported skipping school two or more times in a month; 15% reported being afraid to go to school; and 39% reported that their grades were worse than the previous year. Nevertheless, 75% were happy when they thought about going to school, and only 5% felt that school was a waste of time.

One possible reason for this finding may be that the majority of the schools in the sample suffered from a general lack of resources, which may have detrimentally affected the school climate. Of the teachers and administrative personal who responded to items on the MAMBI 83% reported that there are not sufficient desks and chairs for the students in the classrooms; 86% stated that there was not chalk for the blackboards; 56.6% reported that students didn't have their own textbooks; 60% reported that there were broken windows in the building that went without repair; and 68% reported that doors in building were damaged or off their hinges. What's more, as was previously mentioned, conversations with administrators and teachers revealed that most of the teachers in the schools surveyed functioned on an itinerant basis; that is they traveled from school to school teaching their subject matter as hourly paid workers. One such teacher reported teaching 10 different courses at 4 distinct schools. It may be that these factors combine to inhibit the formation of a strong school attachment.

While not included in the current study, another factor that may have influenced the school climate variable is the reported adversarial relationship between teachers and parents (Lodo-Platone, 2004). According to Bronfenbrenner's eco-developmental theory

a mesosystem effect occurs when teachers and parents have poor communication. If parents perceive themselves in an adversarial relationship with teachers these feelings will be reflected in their interactions with their children, which in turn may exert an influence on the student's attachment with the institution in general, and therefore, inhibit the formation of an important protective factor.

A third possible reason for not finding a significant link between SCLM and AFU is the design of the study. The ceiling effect found in SCLM indicates that most students had formed a bond with the institution as measured by the PACARDO-V. This ceiling effect could be the result of: (a) the measure may not be valid for Venezuela, or (b) that the youth who did not form a significant bond with the institution were not in the sample (i.e., had dropped out of school).

The findings of this study indicate an important disparity between schools as a context in the U.S. compared to schools as a context in sampled population in Venezuela. The combination of poor school conditions, teachers who may not form an institutional bond themselves, or identify any professional satisfaction from their work at a given school, and an adversarial relationship between teachers and parents, may deter the formation of a strong school attachment on the part of students, or at least not in the same manner in which it is formed in the U.S. Given that SCLM is an important protective factor in the U.S. but did not result as one in the present study, does not necessarily imply neglecting SCLM as a focus for intervention. The findings of this study suggest that school attendance may be a protective factor in and of itself by virtue of the low rates of illicit substance use among school-attending youth. This being the case, helping students form an institutional bond may hold the potential to reduce desertion rates, which in turn,

would allow them to have contact with an important protective factor. More research is needed to determine the extent of the effect of SCLM on Venezuelan youth, and if this is an area to be targeted for intervention.

Gender

The results of the present study agree with previous research and support the hypothesis that gender (FEM) is significantly related to AFU, and that males have earlier onset of drug use than do females. However, independent sample *t* tests revealed that the only drug where there was a significant mean difference in age of onset was alcohol with males beginning use at an average 12.24 (SD = 2.388) years, and females at an average 12.70 (SD = 2.167) years ($t = -3.87$, $p < .001$). This is a mean difference of .459, or approximately 5.5 months. Additionally, a contingency table analysis revealed that males are not any more likely to use any of the other drugs mentioned in the study than are females.

While inferences regarding trends cannot be made from the present data, these findings would appear to suggest agreement with other research that shows a growing convergence in rates of use and of age of initiation between males and females (e.g., Khoury, Warheit, Zimmerman, Vega, & Gil, 1996). This convergence in drug use between genders may be related to increasingly fewer restrictions on females in Venezuela. In the present study, independent *t* tests showed no significant differences between males and females on the parental monitoring scale. Historically in Latin America, female children have been monitored by parents more closely than males. These results suggest that this historic trend may be shifting, and that other factors apart

from parental monitoring may be operating to create the small but significant gender difference found in the data. More research is needed to test this hypothesis.

Socioeconomic Status

Studies that have examined the effects of socioeconomic status (SES) on adolescent substance use have had mixed results. Some researchers have found a positive relationship between SES and adolescent substance use (e.g., Luthar & Becker, 2002; Luthar & D'Avanzo, 1999), while others have reported a negative relationship between SES and adolescent substance use (e.g., Chassin, Presson, Sherman, & Edwards, 1992; Droomers, Schrijvers, Casswell, & Mackenback, 2003). The present study found no significant effect of SES on AFU and thus the hypothesis that AFU will vary with SES was not supported. However, MSES, a school level average modeled in the random intercept, was found to significantly covary with AFU ($t = -7.219$, $p < .001$). These findings show that while SES as a characteristic of the individual is not related to AFU, MSES as characteristic of the school is strongly related to AFU, such that higher levels of MSES at the school level are related to earlier ages of drug use. Moreover, the effects of MSES moderated the effects of FAM, EXTB, and FEM creating a cross-level interaction.

Family therapists theoretically look at substance use from a systemic perspective that includes multiple systems, but in practice they typically limit their interventions to the confines of the family. What these results suggest is the need to enlarge the scope of interventions to include other subsystems that influence the decision on the part of youth to engage in substance use. MSES is a variable which, independent of the individual's personal resources or of those which the family may possess, influences AFU through a sub-systemic effect. While widely recognized by theoreticians as existing (e.g., Becvar &

Becvar, 2003) these sub-systemic effects are rarely taken into account in the development of treatment or prevention strategies. The findings from this study suggest that such an effect is not only present, but may exert a more powerful influence over the decision of the youth to initiate drug use than that of the family. This point is illustrated in the graphical representation of the data in figure 4.6. Here, while holding constant the effects of externalizing behavior, the line indicating earliest age of onset is low-FAM with high-MSES (first line from the bottom up). If the influence from the family were the more prominent covariate of AFU, then one would expect that the next line to be low-FAM with low-MSES. However, this is not the case. The next line, from the bottom up, is high-FAM with high-MSES indicating that the effects of MSES may supersede the influence of FAM on the adolescent's decision to initiate drug use. This implies that a sub-system or culture exists in a given school that is differentially associated with substance initiation. When assessing for individual risk and protective factors, it is important to determine to what extent factors associated with the individual are confounded by environmental conditions. That is, putative individual differences assumed to be associated with initiation of drug use may actually reflect the cultural influences of a subsystem in which the individual is nested. This has obvious implications for the development of prevention and treatment strategies. While not sufficient to make causal inference, the data analysis from this study do indicate that there is an ecological effect that covaries with AFU at what Bronfenbrenner denominated the mesosystem, or at the intersection of the family, peer, and school microsystems. MSES while not rending non-significant the effects of FAM, EXTB, and FEM, does appear to moderate their relationship with AFU.

Discussion of Methodologies: Limitations

Survey Population

An important consideration of this dissertation involves the specification of the survey population in terms of school-attending youths. Youths not in school were excluded from the sampling frames. The sample did include both private and public school students, but youth who had already dropped out of school to work, to care for a child, or for other reasons were not represented. Consequently, it is possible that youths most seriously affected by drug use are not included in the sample (i.e., those who dropped out of school because of their drug use, or who began drug use after dropping out of school). Additionally, schools were selected from only two districts in the western region of the capital city of Venezuela, Caracas. These limitations are the result of logistic decisions, cost considerations, and the general purpose of the study being to collect preliminary data on which to base future projects. As a result, there is a need to limit inferences to the school-attending youth of the study population. Generalizing the present findings to all Venezuelan youth, or even to non-school-attending youth from the area from which the sample was drawn would be inappropriate.

Measurement Strategies: Use of Self-Reported Data

The self-report assessment of drug use has limitations such as possible over-reporting or under-reporting by various subpopulations (Beauvais & Oetting, 2002; Vega, Zimmerman, Warheit, Apospori, & Gil, 1993). For example, in the United States, increased prevalence of drug use has been described among adolescents that participated

in the Monitoring The Future (MTF) survey compared to the household data collected in the National Household Survey on Drug Abuse (NHSDA) (Gfroerer, Wright, & Kopstein, 1997; Wright & Davis, 2001). This discrepancy may be the result of an unwillingness to admit drug use due to the close proximity of adolescents to their parents in the NHSDA. However, it is equally possible that the MTF survey approach may have resulted in inflated estimates.

In the present study, in order to ensure that accurate information was collected, a protocol was developed to engage the youth in the process of data collection, through creating excitement, a sense of meaning, an interactive mode of delivery, an assurance of confidentiality and voluntary participation, and a sense of respect for the wishes of their respective parent or guardian. Given the previously reported low rate of non-response, it seems that a high level trust was achieved. In addition, efforts were made to identify and exclude youth who were over-stating their drug use. This was accomplished by including two items that refer to the fake drug "Cadrina." Again, the low rates of youth indicating that they had consumed Cadrina suggest a level of truthfulness in the responses, at least in the case of possible over-statement of their use.

It is also possible that due a tendency to give socially desirable responses, youth inaccurately reported their levels on the dependent measure and the covariates of interest. An effort was made to reorganize and, or separate desks to allow students a greater sense of privacy. However, this was not always possible given the small physical size of the classroom and the large number of students present on the day of the survey. To the extent that students felt that they lacked adequate privacy there may have been under-

reporting of their levels of drug involvement and, or their levels on covariates such as FAM and EXTB.

Confounding is a threat to the validity of this study, and there is a potential for the mis-specification of the model through the exclusion of important covariates (Raudenbush & Bryk, 2002). Attempts were made to avoid this problem by the inclusion of the most prominent covariates identified in the literature. At the same time, there may be unmeasured confounders that are not accounted for in the models.

Another limitation of this study is that there is not information on other aspects of parenting practices such as consistency of discipline, use of positive reinforcement, or history of familial substance uses such alcohol disorders. These constructs may be useful when considering how important covariates interact to influence youthful drug involvement (Ialongo, et al, 2001).

A further concern pertains to the statistical distribution of the covariates. All of the covariates were either negatively or positively skewed creating strong "ceiling" or "floor" effects with large percentages of the sample giving responses that tend toward the highest or lowest possible scores for that construct. Consequently, it is difficult to distinguish youths whose scores are in the more extreme end of the spectrum. For example, FAM was negatively skewed and had a strong "ceiling effect" whereby approximately 25% of the sample gave responses that produced the highest score possible on this construct. As such, it is difficult to distinguish youths whose parents have more coercive parenting styles. To the extent that these limitations are associated with higher levels of drug involvement, the findings would be skewed to null values and might tend to underestimate the association between these covariates and youthful drug involvement.

Lastly, it is possible that the measures are not properly capturing the constructs they are intended to measure. The original PACARDO project questionnaire from which the PACARDO-V was adapted for use in Venezuela is based on the translation of a North American, English language instrument; it is possible that some items have not "translated" well or do not capture adequately the cultural reality of this population. At the same time, a great deal of effort was made to develop an instrument that was not only language appropriate but culturally appropriate as well. The input of collaborators from each country in the original PACARDO project was incorporated into the development of the instrument, and both the PACARDO and the PACARDO-V were piloted prior to assessment.

Model Specification and Temporal Sequencing

The findings of this study are based upon cross-sectional survey data and a limited set of assumed covariates of AFU. Necessarily, not all pertinent constructs could be measured within the confines of a dissertation study with the previously mentioned logistical and financial constraints. Therefore, some of the omitted constructs might be confounding the observed associations. Furthermore, the small sample size at level-2 in the multilevel model potentially reduced the amount of variance between schools and thus placed constraints on the degree to which covariates could be modeled at this level.

Additionally, the cross-sectional nature of the data precludes the temporal sequencing necessary for causal inferences. For example, it is possible that parents have "given up" or retreated on their involvement with their child as a result of their drug use instead of the inverse.

Discussion of Methodologies: Strengths

Notwithstanding limitations such as the ones mentioned, the study has a number of counter-balancing strengths. First this study employs a rigorous survey and associated methodology that was previously used in seven other Latin American countries, and adds to the body of existing evidence provided by organizations such as Monitoring the Future (MTF), the European School Survey Project on Alcohol and Other Drugs (ESPAD), and Global Youth Tobacco Survey (GYTS).

Second, the study uses an ecological framework that provides empirical data in support of the need for cultural adaptations in the areas of testing and measurement and treatment and prevention intervention development. Specifically, the ecological framework allows for the understanding of the data from the perspective of a highly segregated society whose clustering effect will inherently produce different contexts and profiles of risk and protective factors among its inhabitants. These observations offer valuable insights to both researchers and practitioners interested in culturally sensitive treatment of youth across the spectrum of diverse ethnicities.

Third, the present study employed a multilevel modeling approach that accounted for the clustering effect of students nested within schools. It is important to note that while the preliminary analysis found SES, peer drug influences (PRDG), and school climate (SCLM) to be significant covariates of age of first drug use (AFU), the hierarchical linear model found just the opposite. SES, PRDG and SCLM did not significantly covary with AFU at the individual level. However, the relationship between SES and AFU was significant as a second level school characteristic in the form of

MSES (Mean SES). This underscores the importance of accounting for the nesting in the data when planning for an appropriate statistical tool. While it is beyond the scope of this dissertation to challenge the findings of other studies that did not account for the nesting of the data, other researchers have. For example, Baldwin, Murray, and Shadish (2005) reexamined the findings of 33 studies reporting on treatments that had been identified as empirically supported treatments (EST) by an American Psychological Association commissioned task force. They found that, depending on what assumptions were made about how large the dependencies among the observations truly were, from 6 to19 of the studies no longer had any significant results after correcting for the violation of the assumption of independence of observations. As was mentioned in chapter four, even though the variance between schools was only approximately 6% in the present study, it is still important to model that variance.

Another related point, and a strength of the methodology, is that the multilevel approach used in this study allowed the slope of FAM to vary randomly. This provided information regarding how the effect of FAM on AFU varied from negligible in some contexts to highly significant in others. While an empirical explanation for this variance was not obtained given the small sample size, this discovery provides evidence for a mesosystemic effect described in Bronfenbrenner's eco-developmental theory, and holds important implications for treatment and prevention strategists to look for family by context interactions when planning interventions.

Fourth, the PACARDO-V survey is one of the first studies to look at risk and protective factors in Caracas, Venezuela and provides preliminary data on which to develop future research and to guide prevention and treatment strategies. The study has a

relatively large sample size that allows detectable differences to be found at the school level. It was conducted with extensive involvement of Venezuelan nationals who all had prior experience working with adolescents in a school setting, and who were very involved in assessing that the instrument was culturally appropriate.

Implications for Treatment and Prevention

Identifying risk and protective factors of adolescent substance use to guide prevention and treatment efforts as well as research has become the primary research paradigm in the field (Vega & Gil, 1998). Many factors that constitute either risk or protection for youth have been established empirically in the substance abuse literature. The risk and protective factors approach provides researchers and human service professionals with clear targets for the focus of their efforts as well as identifies areas that will not produce fruitful results. An important rationale for undertaking the present study has been the identification of communalities and differences among Venezuelan adolescents in order to inform the process of cultural adaptation of family-based prevention and treatment models. The results of this study have the following implications.

First, the findings of the present study indicate that the mean age of first drug use is approximately 12 years for both males and females. Research in the U.S. suggests that before middle school (approximately 12 years of age) parents seem to hold the greatest influence over youth, with peers exerting an increasingly greater influence as the individual moves through adolescence (Cummings, 1995). Since FAM was significantly related to AFU in the present study, this suggests that prevention strategies aimed at

parents would need to target youth and their families at or before 12 years of age to be most effective. Additionally, strategies aimed at peer groups might be most effective if conducted in mid to late adolescence.

Second, the relationship between FAM and AFU suggests that interventions targeting parenting behavior will be effective in delaying the onset of substance use. If future research supports that parental support more than parental monitoring delays onset of substance use among Venezuelan youth, then interventions that add an affective component to behavioral oriented interventions may yield greater results for this population. Additionally, the variation among schools in the relationship between FAM and AFU suggests that context must be an important consideration in the development and testing of any family-based intervention.

Third, as the adolescent begins to struggle with separation from parents and individualization, conforming to peer group norms becomes increasingly important (Lerner, Petersen, & Brooks-Gunn, 1991). Since peer influences were not significantly related to AFU, they may not be technically considered to exercise risk or protective functions in the sample. However, given the numerous studies that have identified peer influences as being predictive of substance abusing behavior in adolescents, it is interesting that in this sample they were not. In fact, some research has found that peer influences may exert a protective function on early use of drugs (Apospori, et al, 1995) among certain groups. This may also be the case with the present sample. In an item that asked youth if many of their friends think it is a bad idea to use drugs, 85.2% responded in the affirmative. This suggests that the relationship within peer groups in Venezuela may constitute a "neutral" area that could be swayed toward exerting a protective

function with appropriate prevention interventions. This potential area for intervention is further supported by the finding that schools with higher MSES had earlier age of first drug use, suggesting that a school culture exists that influences youth beyond individual characteristics. Although the present study did not test for an interaction between peer influences and MSES, it is logical to assume that a mechanism through which the culture created by MSES is communicated is through peer groups.

Fourth, the finding that MSES is inversely related to AFU points to a hypothesis that as schools become more exclusive, AFU decreases and substance use increases. Future research that includes greater variability between schools will have to confirm or reject this hypothesis. However, if true, MSES will be an important identifier for high-risk populations for which specific interventions may be developed. Similarly, EXTB was identified as a strong covariate of AFU and can be used to identify at risk populations for more specific and intensive intervention techniques.

Fifth, school climate did not show a significant relationship with AFU in the analysis. However, as was previously mentioned, the ceiling effect witnessed in the distribution of SCLM may have resulted in a tendency toward the null, in that the vast majority of schools was equally lacking in resources and maintenance of the physical plant. If this is the case, then these results may still hold suggestions for interventions. Given the overall lack of extracurricular activities, a community level intervention may be to find ways to involve community members to develop and implement extra curricular activities for youth, such as sports, business clubs, drama clubs, etc. Additionally, students could be motivated to participate in school beautification activities and creations of artwork that would stimulate a sense of pride and belonging.

Finally, given that evidenced-based treatment and prevention models exist, an important concern for human service professionals and researchers working with ethnic minorities or international populations is whether these models need to be adapted, and if so, to what extent. A primary purpose of this research was to test for the presence of known risk and protective factors in an international population to lay the groundwork for the subsequent implementation of prevention and treatment models. The findings suggest there are similarities and differences between the sample and what is typically found among adolescents in the U.S. The absence of a relationship between peer group influences and AFU is a finding that clearly deviates from the majority of research in the field and one that suggests substantial changes in the design of interventions. The contextual variations that moderate the relationship between FAM and AFU is another difference from how this variable has been shown to work among youth in the U.S. and is also suggestive of adaptations to interventions. The role of MSES in AFU has not received much attention in the published literature in the U.S. and therefore introduces the possibility of a further area for cultural adaptation to established interventions. The low level of illicit substance use among Venezuelan youth suggests the presence of naturally occurring protective factors that must be accounted for and exploited in prevention and treatment models.

One family-based model that has adopted an ecological approach and accounts for cultural differences in the treatment of adolescent behavior problems including substance abusing behavior is "Familias Unidas" (Tapia, Schawartz, Prado, Lopez, & Patin, 2006). Familias Unidas is a multilevel approach that strategically targets risk and protective factors such as parent involvement, peer groups, and school bonding to prevent the onset

of youthful behavior problems. The current study offers empirical evidence that informs the adaptation of models such as Familias Unidas to the Venezuelan culture.

Together these findings suggest the need for a culturally adapted approach in the planning and implementation of treatment and prevention strategies for Venezuelan youth. The complexities introduced by the differing nuances of meaning created by culture and other environmental factors necessitate an ecological approach to adolescent substance use. Researchers and practitioners that ignore these nuances run the risk of missing the mark and wasting precious resources that will ultimately result in the perpetuation of human suffering.

Implications for Further Research

While this study provides a useful description of the level of youthful drug involvement in this particular region of Caracas and its demographic characteristics, the cross-sectional design provides only a "snapshot" in time. In order to obtain information on how the identified covariates interact to effect the development of youthful drug involvement over time a longitudinal design is necessary.

Alternative sampling strategies that allow for inclusion of non-school attending youth would allow for a more definitive picture of youthful drug involvement in the country. However, samples of school-attending youth are still important. The great likelihood that these youth will mature into the private sector and public sector leaders of the future necessitates a comprehensive understanding of the factors that influence their development. Moreover, comparing and contrasting the dynamics between school

attending and non school-attending youth holds the potential to elucidate individual, and environmental factors that influence developmental processes.

Future research in this area should also seek to increase the number of participants and the number of schools in the sample and to diversify the sample across socioeconomic and geographic strata. Given the low incidence of illicit drug use, a larger sample size at level-1 is needed in order to model illicit drug use and compare the characteristics of youth who use illicit drugs to those who only consume alcohol and cigarettes. Additionally, increased amounts of schools from differing levels of SES and from rural and urban environment would provide the ability to model second level characteristics that may exert an influence over level-1 covariates as was seen in the case of MSES and FAM in the present study. Quantitative estimates gained from the present study provide evidence of a clustering effect such that the occurrence of drug experiences in one youth within a school is increased when other youths in the same school are involved with drugs. Findings of this type confirm the need to identify school-level factors that contribute to student drug use and in order to develop school-based prevention efforts (Delva Bobashev, Gonzalez, Cedeno, & Anthony, 2000).

Qualitative research or mixed-method designs that included the use of focus groups and consultation with psychologists, parents, youth, and educators from differing regions of the country would aide in the refinement of a more robust family attention construct. This could include a more vigorous multidimensional measure that includes items tapping differing facets of parenting such as consistency of discipline, positive reinforcement, family cohesion, and child rejection. A more robust multidimensional construct would allow for a more complete understanding of the mechanisms involved in

the influence that family attention might be playing in relation to youthful drug involvement. The same method could also be used to gain increased understanding regarding the school climate variable and the apparent adversarial relationship between teachers and parents.

Additionally, research is needed to establish the potential interaction between parental monitoring and parental support. It may be that there is a curvilinear relationship between monitoring and support such that monitoring is only significant up to a point and then becomes non significant or detrimental if not accompanied by support. Therefore, in regards to the role of parental monitoring, more research is needed to ferret out the idiosyncrasies of how this variable works in the Venezuelan culture.

Another area of research is the nature of the adversarial roles between teachers and parents. This area may be of particular concern as it relates to school desertion rates. Research has established that in the U.S., students who drop out are more likely to use drugs (Wallack & Corbett, 1990). In fact, school drop-outs have been shown to have rates of tobacco use 79% higher than their school-attending peers (Pirie, Murray, & Luepker, 1988). If school is shown to be a protective factor buffering against the early onset of substance use then cultivating the relationship between teachers and parents may be an important area of intervention.

Finally, the hypothesized naturally occurring protective factors that buffer against the early onset of substance use among school-attending youth is an intriguing area for future research, and one that holds considerable potential to inform both theories regarding adolescent substance use as well as models that seek to reduce the number of youth who engage in this behavior.

Concluding Remarks

Family therapy practitioners and prevention specialists rely on sound empirical data to formulate and deliver their interventions. While the field of adolescent substance use has made many gains over the past years, much is still left to be learned. The present study is illustrative of the promise that cross-national research holds to reveal aspects of environmental influences that otherwise may be difficult to discover by those embedded in the same system they seek to observe (Keeney, 1983). The findings provided by this study underscore the importance of culturally adapted interventions that carefully assess for intergroup and intragroup variations created by social contexts. Individuals form different cultures experience their process of socialization in systematically different ways that should be the focus of research and intervention. Family interaction patterns, structure, and social contexts work together to form an ecosystem that creates meaning for its members, and which in turn governs behavior through recursive feedback loops. Risk and protective factors that influence adolescent substance use are abstract constructs that researchers use to attempt to capture and measure these interactional sequences and social environments.

This study identified family attention, externalizing behavior, gender, and mean socioeconomic status as salient covariates of age of first drug use. It also revealed characteristics of Venezuelan society as they pertain to adolescent substance use. While far from comprehensive, this study advances the literature on adolescent substance use in several important ways: (a) by being one of only a handful of studies that have assessed substance use in the country of Venezuela; (b) by providing empirical data that shed light

on the importance of culture in the design and delivery of treatment and prevention strategies; and (c) by suggesting new areas of research for both domestic and international researchers. Finally, this study has shed light on what public health planners and human services providers call for most desperately: clearly identified targets that are amenable to prevention and treatment activities.

APPENDIX A

PACARDO-V 2007

ESTE CUESTIONARIO ES ANÓNIMO, POR ESO NO DEBES ESCRIBIR TU NOMBRE EN NINGUNA PARTE.

INSTRUCCIONES GENERALES:

Lo que vas a realizar es fácil y no necesitas haber estudiado para contestar las preguntas. No es un examen y por lo tanto no hay respuestas buenas ni malas, solo tus percepciones. Lo importante es que las repuestas que des, sean verdaderas.

Si te surge alguna duda o si quieres hacer algún comentario, nosotros con gusto atenderemos tus inquietudes, solo alza la mano. Por favor, no dudes en preguntarnos si lo necesitas.

La información que provees en este cuestionario se manejará anónimamente, dado que su finalidad es conocer opiniones y características de grupos de jóvenes estudiantes para el desarrollo y aplicación de programas preventivos.

Hay cinco secciones con un total de 112 preguntas. Por favor, responde a todas las preguntas. Aunque las respuestas no se ajusten exactamente a tu experiencia, marca la respuesta que te parece más acertada, o que es más cercana a tu experiencia. Por ejemplo, marca <SI>, si la mayoría de las veces es cierto, o <NO>, si la mayoría de las veces es falso. Si alguna pregunta te hace sentir incómodo(a), puedes marcar la opción <Sin Responder> (SR).

Vamos a estar leyendo en voz alta las preguntas, así que nadie debe adelantarse o ir a la próxima página hasta que se indique. Esto nos ayudará a terminar más rápido y estar seguros que nadie se confunda o se pierda.

¿Alguien tiene alguna pregunta?

INSTRUCCIONES PARA EMPEZAR:

1. Saca la hoja de respuesta (una hoja con muchos círculos).
2. Usa el lápiz que está dentro del sobre para llenar la hoja de respuestas.
3. Asegúrate de llenar los círculos completamente y de no hacer marcas fuera de círculo. Si te equivocas, asegúrate de borrar la marca equivocada completamente. La máquina no puede leer dos marcas.
4. Coloca el número que está en tu sobre en el cuadro llamado PID (en la parte inferior izquierda de la hoja). Pon los números en los cuadros y llena el círculo correspondiente debajo de cada número.
5. Donde dice nombre (last name) coloca las primeras 5 letras del nombre del colegio sin dejar espacios. Por ejemplo, si el colegio se llama "San Agustín", coloca en los cuadros "sanag". Y llena los círculos correspondientes debajo de cada letra.

6. No pongas tu nombre en ninguna parte de la hoja.
7. Donde dice fecha (date) anota tu edad.
8. Ve al número 1 para comenzar.

Sección 1: Preguntas generales

1. Tu posición en el colegio (A) Estudiante
2. Tipo de escuela: (A) Privada (B) Pública

3. Tu Edad: (A) 11-12 (B) 13-14 (C) 15-16 (D) 17-18 (E) 19+

4. Año Escolar: (A) Séptimo/1er año (B) Octavo/2do año (C) Noveno/3er año
   (D) 1° Diver./4to año (E) 2° Diver./5to año

5. ¿Con qué raza te identificas más? (A) Negra (B) Morena (C) Blanca
   D) Indígena

6. ¿Dónde vives? (A) barrio/bloques/casa (B) urbanización/apartamento,
   (C) quinta

7. ¿Cuántos vehículos tiene tu familia? (A) 0 (B) 1 (C) 2 (D) 3 (E) Más de 3

8. ¿Cuántas personas viven en tu casa? (A) 1-3 (B) 4-6 (C) 7-8
   (D) 9-10 (E) 10+

9. ¿Cuántas dormitorios tiene tu casa?
   (A) 0 es un solo ambiente (B) 1 (C) 2-3 (D) 4-5
   (E) 6+

10. ¿Cuál es tu sexo? (A) Varón (B) Hembra

11. ¿A cuál religión perteneces? (A) Católica, (B) Cristiana no Católica (C) Musulmana (D) Otra (E) Ninguna

12. ¿Qué grado académico tiene tu padre (ó la persona que es como tu padre)? (A) Primaria (B) No terminó Secundaria (C) Terminó Secundaria (D) No terminó estudios superiores (E) Terminó estudios superiores

13. ¿Qué grado académico tiene tu madre (ó la persona que es como tu madre)? (A) Primaria (B) No terminó Secundaria (C) Terminó Secundaria (D) No terminó estudios superiores (E) Terminó estudios superiores

Sección 2: Preguntas sobre diferentes aspectos de la vida del joven venezolano

Por favor, responde todas las preguntas, aunque las respuestas no se ajusten exactamente a tu experiencia. Marca <SI>, si la mayoría de las veces es cierto, o <NO>, si la mayoría de las veces es falso. Marca <SR> si la pregunta te incomoda y no quieres responder. No debes dejar ninguna pregunta sin responder. Marca la respuesta correspondiente llenando completamente el círculo en la hoja de respuestas.

14. ¿Tus padres o representantes saben lo que piensas o sientes sobre las cosas importantes para ti?	Si (A)	No (B)	SR (C)
15. ¿Tus padres o representantes, han estado conscientes de lo que te gusta o no te gusta?	Si (A)	No (B)	SR (C)
16. ¿Siempre pides permiso a tus padres cuando sales de la casa a divertirte?	Si (A)	No (B)	SR (C)
17. ¿Has sentido que eres importante para tus padres o representantes?	Si (A)	No (B)	SR (C)
18. ¿Generalmente tus padres o representantes han estado enterados de dónde estás y qué haces?	Si (A)	No (B)	SR (C)
19. A veces, los padres les dicen a sus hijos que no se junten con personas que se meten en problemas. ¿Te han dicho tus padres o representantes que no te juntes con personas que puedan meterte en problemas durante el último año?	Si (A)	No (B)	SR (C)
20. A veces los jóvenes regresan a casa después de la escuela y no encuentran a nadie. ¿Han estado en casa tu papá, tu mamá o algún otro adulto cuando has regresado a casa después de clases o trabajo, durante el último año escolar?	Si (A)	No (B)	SR (C)
21. ¿Algún miembro de tu familia que vive en casa (Madre, Padre, Hermano(a)), ha fumado cigarrillos durante el último año?	Si (A)	No (B)	SR (C)
22. ¿Algún miembro de tu familia que vive en casa (Madre, Padre, Hermano(a)) ha consumido bebidas alcohólicas durante el último año?	Si (A)	No (B)	SR (C)
23. ¿Algún miembro de tu familia que vive en casa ha tomado alcohol hasta el punto de causar problemas en la casa, en el trabajo o con los amigo(a)s durante el último año?	Si (A)	No (B)	SR (C)
24. ¿Algún miembro de tu familia que vive en casa (Madre, Padre, Hermano(a)) ha consumido alguna droga ilegal como la marihuana, cocaína, etc. durante el último año?	Si (A)	No (B)	SR (C)
25. ¿Con frecuencia has tenido discusiones con tus padres que han terminado a gritos?	Si (A)	No (B)	SR (C)
26. Mis padres siempre me están hablando sobre lo dañino que son las drogas.	Si (A)	No (B)	SR (C)
27. Mis padres siempre me están hablando sobre lo dañino que son el alcohol y los cigarrillos.	Si (A)	No (B)	SR (C)

28. ¿Alguno(a) de tus amigo(a)s se ha metido en problemas con la policía?	Si (A)	No (B)	SR (C)
29. ¿Tus amigo(a)s han robado, o han causado daño a propósito a las cosas de otras personas?	Si (A)	No (B)	SR (C)
30. Alguno(a)s de mis amigo(a)s fuman cigarrillos.	Si (A)	No (B)	SR (C)
31. Mucho(a)s de mis amigo(a)s fuman cigarrillos.	Si (A)	No (B)	SR (C)
32. Algunos jóvenes piensan que es una buena idea usar drogas y otros piensan que es una mala idea usar drogas. ¿Tienes mucho(a)s amigo(a)s que piensan que usar drogas es una mala idea?	Si (A)	No (B)	SR (C)
33. Alguno(a)s de mis amigo(a)s han fumado marihuana.	Si (A)	No (B)	SR (C)
34. ¿Has tenido amigo(a)s a quienes les gusta inhalar pegamento o gasolina?	Si (A)	No (B)	SR (C)
35. Algunos jóvenes han comenzado a usar bazuco, cocaína o crack. ¿Tienes algún amigo que haya usado bazuco, cocaína, o crack?	Si (A)	No (B)	SR (C)
36. ¿Tienes varios(a)s amigo(a)s que usan bazuco, cocaína, o crack?	Si (A)	No (B)	SR (C)
37. ¿Se han "jubilado" del colegio/liceo mucho(a)s de tus amigo(a)s?	Si (A)	No (B)	SR (C)
38. ¿Has pertenecido a alguna banda o pandilla?	Si (A)	No (B)	SR (C)
39. ¿Te enojas con frecuencia?	Si (A)	No (B)	SR (C)
40. Has dañado intencionalmente las cosas de otras personas durante el último año escolar.	Si (A)	No (B)	SR (C)
41. ¿Has robado algo durante el último año escolar?	Si (A)	No (B)	SR (C)
42. ¿Has hecho algo riesgoso o peligroso durante el último año?	Si (A)	No (B)	SR (C)
43. ¿Es cierto que la mayoría de las veces no haces las tareas del colegio?	Si (A)	No (B)	SR (C)
44. He tenido excelentes relaciones con la mayoría de mis profesores.	Si (A)	No (B)	SR (C)
45. ¿Has sentido temor o miedo al ir al colegio/liceo durante el último año escolar?	Si (A)	No (B)	SR (C)
46. Siento que la mayoría de mis profesores se interesan en mi sinceramente.	Si (A)	No (B)	SR (C)
47. ¿Te has "jubilado" de la escuela dos días o más en un solo mes durante el último año escolar?	Si (A)	No (B)	SR (C)

48. ¿Has sido suspendido(a) del colegio/liceo?	Si (A)	No (B)	SR (C)
49. ¿Han empeorado tus notas este año?	Si (A)	No (B)	SR (C)
50. Algunos jóvenes se sienten contento(a)s cuando piensan en ir al colegio/liceo. ¿En general, te has sentido contento(a) al pensar en ir al colegio/liceo, durante el último año escolar?	Si (A)	No (B)	SR (C)
51. He pensado en abandonar el colegio/liceo completamente.	Si (A)	No (B)	SR (C)
52. A veces la gente joven dice que "ir al colegio/liceo es una pérdida de tiempo". ¿Para ti ha sido una pérdida de tiempo ir al colegio o liceo durante el último año escolar?	Si (A)	No (B)	SR (C)
53. En forma general, ¿se ayudan entre sí las personas en tu vecindario o urbanización?	Si (A)	No (B)	SR (C)
54. Cuando un joven hace algo malo, a veces los vecinos le cuentan a su representante. ¿En tu vecindario o urbanización los vecinos le cuentan a los representantes cuando un joven hace algo malo?	Si (A)	No (B)	SR (C)
55. ¿Es común oír que alguna persona fue agredida por la delincuencia en tu vecindario o urbanización?	Si (A)	No (B)	SR (C)
56. Es común ver a personas usando o vendiendo drogas en tu vecindario o urbanización.	Si (A)	No (B)	SR (C)
57. Frecuentemente veo personas borrachas o drogadas en las calles de mi vecindario o urbanización.	Si (A)	No (B)	SR (C)
58. Me siento seguro cuando camino solo(a) en mi vecindario o urbanización.	Si (A)	No (B)	SR (C)
59. Las personas que viven en tu vecindario o urbanización frecuentemente dañan o roban la propiedad de otros.	Si (A)	No (B)	SR (C)

Sección 3: Preguntas sobre el efecto y accesibilidad de las drogas

Por favor, responde a todas las preguntas, aunque las respuestas no se ajusten exactamente a tu experiencia. Marca solo una de las letras <A, B, C, o D>, según se ajuste mejor a tu experiencia. Marca <(E) No Sé> solo si la pregunta te incomoda y no quieres responder. No debes dejar ninguna pregunta sin contestar. Marca la respuesta correspondiente llenando completamente el círculo en la hoja de respuestas.

60. ¿Qué riesgo corre la gente a perjudicarse (físicamente o de otras maneras), si fuma alrededor de una caja de cigarrillos por día?	(A) Ningún riesgo	(B) Leve riesgo	(C) Mediano riesgo	(D) Gran riesgo	(E) No sé
61. Para ti y tus amigo(a)s, ¿qué tan fácil o difícil es conseguir cigarrillos?	(A) Muy fácil	(B) Fácil	(C) Difícil	(D) Muy difícil	(E) No sé

62. ¿Qué riesgo corre la gente a perjudicarse (físicamente o de otras maneras), si de vez en cuando consume una o dos bebidas alcohólicas?	(A) Ningún riesgo	(B) Leve riesgo	(C) Mediano riesgo	(D) Gran riesgo	(E) No sé
63. ¿Qué riesgo corre la gente a perjudicarse (físicamente o de otras maneras), si consume bebidas alcohólicas **frecuentemente**?	(A) Ningún riesgo	(B) Leve riesgo	(C) Mediano riesgo	(D) Gran riesgo	(E) No sé
64. Para ti y tus amigo(a)s, ¿qué tan fácil o difícil es conseguir alcohol?	(A) Muy fácil	(B) Fácil	(C) Difícil	(D) Muy difícil	(E) No sé
65. ¿Qué riesgo corre la gente a perjudicarse (físicamente o de otras maneras), si consume crack o bazuco de vez en cuando?	(A) Ningún riesgo	(B) Leve riesgo	(C) Mediano riesgo	(D) Gran riesgo	(E) No sé
66. ¿Qué riesgo corre la gente a perjudicarse (físicamente o de otras maneras), si consume crack o bazuco **frecuentemente**?	(A) Ningún riesgo	(B) Leve riesgo	(C) Mediano riesgo	(D) Gran riesgo	(E) No sé
67. Para ti y tus amigo(a)s, ¿qué tan fácil o difícil es conseguir crack o bazuco?	(A) Muy fácil	(B) Fácil	(C) Difícil	(D) Muy difícil	(E) No sé
68. Para ti y tus amigo(a)s, ¿Qué tan fácil o difícil es conseguir Ecstasy?	(A) Muy fácil	(B) Fácil	(C) Difícil	(D) Muy difícil	(E) No sé
69. ¿Qué riesgo corre la gente a perjudicarse (físicamente o de otras maneras), si consume Ecstasy de vez en cuando?	(A) Ningún riesgo	(B) Leve riesgo	(C) Mediano riesgo	(D) Gran riesgo	(E) No sé
70. ¿Qué riesgo corre la gente a perjudicarse (físicamente o de otras maneras), si consume Ecstasy **frecuentemente**?	(A) Ningún riesgo	(B) Leve riesgo	(C) Mediano riesgo	(D) Gran riesgo	(E) No sé
71. Para ti y tus amigo(a)s, ¿qué tan fácil o difícil es conseguir inhalantes como pegamento, etc.?	(A) Muy fácil	(B) Fácil	(C) Difícil	(D) Muy difícil	(E) No sé
72. ¿Qué riesgo corre la gente a perjudicarse (físicamente o de otras maneras), si consume inhalantes de este tipo de vez en cuando?	(A) Ningún riesgo	(B) Leve riesgo	(C) Mediano riesgo	(D) Gran riesgo	(E) No sé

73. ¿Qué riesgo corre la gente a perjudicarse (físicamente o de otras maneras), si consume inhalantes de este tipo **frecuentemente**?	(A) Ningún riesgo	(B) Leve riesgo	(C) Mediano riesgo	(D) Gran riesgo	(E) No sé
74. ¿Qué riesgo corre la gente a perjudicarse (físicamente o de otras maneras), si fuma marihuana de vez en cuando?	(A) Ningún riesgo	(B) Leve riesgo	(C) Mediano riesgo	(D) Gran riesgo	(E) No sé
75. ¿Qué riesgo corre la gente a perjudicarse (físicamente o de otras maneras), si fuma marihuana **frecuentemente**?	(A) Ningún riesgo	(B) Leve riesgo	(C) Mediano riesgo	(D) Gran riesgo	(E) No sé
76. Para ti y tus amigo(a)s, ¿qué tan fácil o difícil es conseguir marihuana?	(A) Muy fácil	(B) Fácil	(C) Difícil	(D) Muy difícil	(E) No sé

Sección 4: Preguntas sobre diferentes aspectos de la vida del joven venezolano en términos de frecuencia.

Por favor, responde a todas las preguntas, aunque las respuestas no se ajusten exactamente a tu experiencia. Marca solo las letras <A, B, C, D, o E>, según se ajusta mejor a tu experiencia. No debes dejar ninguna pregunta sin contestar. Marca la respuesta correspondiente llenando completamente el círculo en la hoja de respuestas.

Las siguientes preguntas se refieren al último año.	Ni Una Sola Vez Este Año	Muy De Vez en Cuando Durante el Año	Varias Veces al Mes	Varias Veces Cada Semana	A Diario o Más
77. Ver televisión o jugar videojuegos en casa.	A	B	C	D	E
78. Practicar algún deporte como fútbol, béisbol, escalar la montaña, etc.	A	B	C	D	E
79. Tocar un instrumento musical	A	B	C	D	E
80. Trabajar para ganar dinero	A	B	C	D	E
81. Ir de citas o cortejar	A	B	C	D	E
82. Fumar cigarrillos	A	B	C	D	E
83. Pasar tiempo con mi familia	A	B	C	D	E
84. Apostar por dinero (dados, caballos,	A	B	C	D	E

cartas, etc.)					
85. Rezar, orar o leer la Biblia	A	B	C	D	E
86. Hacer tareas en la casa como cocinar, limpiar, etc.	A	B	C	D	E
87. Fumar marihuana	A	B	C	D	E
88. Ir a actividades de la iglesia como clases, actividades sociales, retiros, etc.	A	B	C	D	E
89. Ir a conciertos de música rock, reguetón, etc.	A	B	C	D	E
90. Consumir alcohol, cerveza, anís, etc.	A	B	C	D	E
91. Hacer tareas y estudiar para los exámenes del colegio/liceo	A	B	C	D	E
92. Consumir crack, bazuco, o cocaína	A	B	C	D	E
93. Salir a bailar	A	B	C	D	E
94. Salir con amistades al cine o a pasear en los centros comerciales	A	B	C	D	E
95. Consumir heroína	A	B	C	D	E

Sección 5: Preguntas sobre la edad en que hubo la primera oportunidad de consumo y la edad del primer consumo.

Voltea de nuevo la hoja de respuestas hasta el lado 1 (SIDE 1). A La mano derecha superior verás unas cajas verticales con círculos adentro. Estos círculos solo contienen números. En esta sección todas las respuestas serán edades. La primera columna de números dentro de los círculos, corresponde a la posición de las decenas y la segunda columna a la posición de las unidades. Por ejemplo si tu respuesta fuese 7, colocarías 0 en la primera columna y 7 en la segunda; si tu respuesta fuese 16, colocarías 1 en la primera columna y 6 en la segunda. Si aun no has tenido oportunidad de hacer lo que dice la pregunta, colocarías 0 en la primera columna y también 0 en la segunda columna. Marca la respuesta correspondiente llenando completamente el círculo en la hoja de respuestas. Por favor, responde a todas las preguntas, contestando lo que más se ajusten a tu experiencia.

1. Acerca del cigarrillo. ¿A qué edad tuviste tu primera oportunidad de fumar cigarrillo?	Edad:
2. ¿A qué edad probaste cigarrillo por primera vez?	Edad:

3. Acerca de las bebidas alcohólicas. ¿A qué edad tuviste tu primera oportunidad de consumir bebidas alcohólicas?	Edad:
4. ¿A qué edad probaste alcohol por primera vez?	Edad:
5. Acerca del crack o bazuco. ¿A qué edad tuviste tu primera oportunidad de consumir crack o bazuco?	Edad:
6. ¿A qué edad probaste crack o bazuco por primera vez?	Edad:
7. Acerca de Ecstasy, ¿A qué edad tuviste tu primera oportunidad de consumir Ecstasy?	Edad:
8. ¿A qué edad probaste Ecstasy por primera vez?	Edad:
9. Acerca del pegamento del zapatero, gasolina, éter, u otras sustancias inhalantes. ¿A qué edad tuviste tu primera oportunidad de consumir inhalantes de este tipo?	Edad:
10. ¿A qué edad probaste inhalantes por primera vez?	Edad:
11. Acerca de la droga Cadrina ¿A qué edad tuviste tu primera oportunidad de consumir la droga Cadrina?	Edad:
12. ¿A qué edad probaste la droga Cadrina por primera vez?	Edad:
13. Acerca de las drogas como la heroína. ¿A qué edad tuviste tu primera oportunidad de consumir la heroína?	Edad:
14. ¿A qué edad probaste por primera vez heroína?	Edad:
15. ¿A qué edad probaste por primera vez pastillas "por razones no-médicas" que fueron prescritas por un médico a otra persona tales como el valium, etc.?	Edad:
16. Acerca de la marihuana. ¿A qué edad tuviste tu primera oportunidad de fumar marihuana?	Edad:
17. ¿A qué edad probaste marihuana por primera vez?	Edad:

Muchísimas gracias por tu colaboración. Por favor, devuelve la hoja de respuestas, el PACARDO, y el lápiz de nuevo al sobre y colócalo en la caja. Te estaremos obsequiando un bolígrafo como señal de nuestro agradecimiento por haber participado en este estudio.

¿Hay alguna otra pregunta antes de terminar?

APPENDIX B

PACARDO-V 2007

THIS SURVEY IS ANONYMOUS AND THEREFORE YOU SHOULD NOT WRITE YOUR NAME ANYWHERE ON ANY OF THE FORMS.

GENERAL INSTRUCTIONS:

What you are going to do is not difficult and it doesn't require any study to answer the questions. It is not an exam and there are no "right" and "wrong" answers. What is important is that the answers you give are true.
If you have a question or comment, we are happy to help you, just raise your hand.

The information in this survey is secret. The purpose is to understand the opinions and characteristics of young people like you in order to develop and implement prevention programs.

There are five sections and a total of 112 questions on the survey. Try to respond to all of them. Even if the answers don't coincide exactly with your experience, mark the answer that best describes your experience.

For example, mark "Yes" if the majority of the time the answer is correct, or "No" if the majority of the time it is false. If a question makes you feel uncomfortable you can mark the option, "No Response" (NR), or simply leave it blank.

We will be reading the questions out loud, and we ask that you do not work ahead or go to the next page until you are instructed to do so. This will help us finish more quickly and ensure that no one gets confused or lost.

Do you have any questions before we start?

INSTRUCTION TO BEGIN:

1. Take out the answer sheet (the sheet with a lot of little circles on it).
2. Use the pencil that is in the envelope to fill out the answer sheet.
3. Be sure to fill the circles in completely and not to make marks out side of the circle. If you make a mistake, be sure to erase your previous answer completely. The scoring machine will not read two answers.
4. Write the number that is on your envelope in the box labeled PID on the answer sheet (in the lower left hand corner of the answer sheet). Write the number in the boxes and then fill in the corresponding circle below each number.
5. In the box that says "last name" write the first five letters of the name of your school without leaving any spaces. For example if your school name is "San Agustin", write "sanag," and fill in the corresponding circle below each letter.
6. DO NOT put your name on the answer sheet.
7. Where it says "date", write your age.
8. Go to number 1 to begin.

Section 1: General questions

1. Your position in the school (A) Student
2. Type of school: (A) Private (B) Public
3. Your age: (A) 11-12 (B) 13-14 (C) 15-16
   (D) 17-18 (E) 19+
4. What grade are you in: (A) Seventh (B) Eighth (C) Ninth (D) Tenth
   (E) Eleventh
5. Which race do you most identify with? (A) Black (B) Brown (C) White
   D) Indian
6. Where do you live? (A) housing Project (B) Apartment (C) House
7. How many cars does your family have? (A) 0 (B) 1 (C) 2 (D) 3 (E) More than 3
8. How many people live in your house?
   i. (A) 1-3 (B) 4-6 (C) 7-8 (D) 9-10 (E) 10+
9. How many bedrooms are there where you live?
   (A) 0 it only has one room (B) 1 (C) 2-3 (D) 4-5 (E) 6+
10. What is your sex? (A) Male (B) Female
11. What is your religion?
    (A) Catholic (B) Christian non-Catholic (C) Muslim (D) Other
    (E) None
12. How many years of education does your father (or the person who is like your father) have?
    i. (A) Elementary school (B) Didn't finish high school (C) Finished high school (D) Didn't finish college(or technological training)
       (E) Finished college(or technological training)
13. How many years of education does your mother (or the person who is like your mother) have?
    i. (A) Elementary school (B) Didn't finish high school (C) Finished high school (D) Didn't finish college(or technological training)
       (E) Finished college(or technological training)

Section 2: Questions about different aspects of Venezuelan youth

Please answer all of the questions even though the answers do not exactly fit your experience. Mark "Yes" if the majority of the time the answer is true or "No" if the majority of the time the answer is false. Mark "NR" if the question makes you feel uncomfortable and you don't want to respond. You should not leave any question without a response. Indicate your answer by filling in the corresponding circle on your answer sheet.

14. Your parents or guardians know how you think or feel regarding the things that are really important to you?	Yes(A)	No (B)	NR (C)
15. Your parents or guardians know what you like and don't like?	Yes(A)	No (B)	NR (C)
16. Do you always ask permission when you go out to have a good time?	Yes(A)	No (B)	NR (C)
17. Do you feel that you are important to your parents/guardians?	Yes(A)	No (B)	NR (C)
18. Generally speaking, your parents or guardians know where you are and what you are doing?	Yes(A)	No (B)	NR (C)
19. Some times, adults tell their children not to hang around other young people who get into trouble. During the last year, have your parents or guardians told you not to hang around friends that could get you into trouble?	Yes(A)	No (B)	NR (C)
20. Sometimes young people come home from school and no adult is there. During the last year have you come home from school or work and no adult has been there?	Yes(A)	No (B)	NR (C)
21. Has a member of your family that lives with you such as mother, father, sibling, etc. smoked cigarettes during the last year?	Yes(A)	No (B)	NR (C)
22. Has a member of your family that lives with you such as mother, father, sibling, etc. drank alcohol during the last year?	Yes(A)	No (B)	NR (C)
23. Has a member of your family that lives with you such as mother, father, sibling, etc. drank alcohol to the point of causing problems during the last year?	Yes(A)	No (B)	NR (C)
24. Has a member of your family that lives with you such as mother, father, sibling, etc. used an illegal drug like marihuana, crack, etc. during the last year?	Yes(A)	No (B)	NR (C)
25. Do you often have arguments with your parents or guardians that end in fights?	Yes(A)	No (B)	NR (C)
26. My parents or guardians are always talking to me about how dangerous drugs are.	Yes(A)	No (B)	NR (C)
27. My parents or guardians are always talking to me about haw dangerous alcohol and cigarettes are.	Yes(A)	No (B)	NR (C)

28. Have some of your friends been in trouble with the police?	Yes(A)	No (B)	NR (C)
29. Have some of your friends stolen, or damaged another person's belongings on purpose?	Yes(A)	No (B)	NR (C)
30. Some of my friends smoke cigarettes.	Yes(A)	No (B)	NR (C)
31. Many of my friends smoke cigarettes.	Yes(A)	No (B)	NR (C)
32. Some young people think that it is a good idea to use drugs and some think that it is a bad idea to use drugs. Do you have many friends that think using drugs is a bad idea?	Yes(A)	No (B)	NR (C)
33. Some of my friends have smoked marihuana	Yes(A)	No (B)	NR (C)
34. Have you had friends that like to sniff glue or gasoline, etc?	Yes(A)	No (B)	NR (C)
35. Some young people have begun to use cocaine, crack or coca base. Do you have a friend that has used cocaine, crack or coca base?	Yes(A)	No (B)	NR (C)
36. Do you have several friends that use cocaine, crack or coca base?	Yes(A)	No (B)	NR (C)
37. Have many of your friends skipped school?	Yes(A)	No (B)	NR (C)
38. Have you ever belonged to a gang?	Yes(A)	No (B)	NR (C)
39. Do you get angry frequently?	Yes(A)	No (B)	NR (C)
40. Have you intentionally damage another person's belongings during the last year?	Yes(A)	No (B)	NR (C)
41. Have you stolen anything during the last year?	Yes(A)	No (B)	NR (C)
42. Have you done anything risky or dangerous during the last year?	Yes(A)	No (B)	NR (C)
43. Is it true that the usually don't do your homework from school?	Yes(A)	No (B)	NR (C)
44. I have you had a good relationship with the majority of my teachers.	Yes(A)	No (B)	NR (C)
45. Have you been afraid to go to school during the last year?	Yes(A)	No (B)	NR (C)
46. I feel that the majority of my teachers are truly interested in me and my well being.	Yes(A)	No (B)	NR (C)
47. Have you skipped school two or more days in a single month during the last school year?	Yes(A)	No (B)	NR (C)

48. Have you been suspended from school?	Yes(A)	No (B)	NR (C)
49. Have your grades gotten worse during this past year?	Yes(A)	No (B)	NR (C)
50. Some young people are happy when they think of going to school. Generally speaking, have you felt happy when you thought about going to school during this past year?	Yes(A)	No (B)	NR (C)
51. I have seriously thought about dropping out of school.	Yes(A)	No (B)	NR (C)
52. Some young people think that going to school is a waste of time. For you, has going to school been a waste of time during this past school year?	Yes(A)	No (B)	NR (C)
53. Generally speaking, do people in your neighborhood help each other?	Yes(A)	No (B)	NR (C)
54. When a young person does something wrong, sometimes the people who live in his/her neighborhood tell the child's parents about it. In your neighborhood when a young person does something wrong, do the neighbors tell the child's parents/guardians about what they did?	Yes(A)	No (B)	NR (C)
55. Is it common to hear of someone being hurt or assaulted by delinquents in you neighborhood.	Yes(A)	No (B)	NR (C)
56. Is it common to see people using or selling drugs in your neighborhood?	Yes(A)	No (B)	NR (C)
57. I frequently see people who are drunk or drugged in the streets of my neighborhood.	Yes(A)	No (B)	NR (C)
58. I feel safe when I walk alone in my neighborhood.	Yes(A)	No (B)	NR (C)
59. Do the people who live in your neighborhood steel or damage the belongings of others?	Yes(A)	No (B)	NR (C)

Section 3: Questions about the risk and accessibility of drugs

Please answer all of the questions even though the answers do not exactly fit your experience. Mark "A, B, C, or D" according to your experience. Mark "E" only if you don't have any idea. Try not to leave any answer blank. Indicate your answer by filling in the corresponding circle on your answer sheet.

60. How much risk of harming themselves (physically or otherwise) does a person run if they smoke a pack of cigarettes daily?	(A) No risk	(B) Slight risk	(C) Medium risk	(D) Great risk	(E) Don't know
61. For you and your friends how easy or difficult is it to get cigarettes?	(A) Very easy	(B) Easy	(C) Difficult	(D) Very Difficu lt	(E) Don't know
62. How much risk of harming themselves (physically or otherwise) does a person run if they have a few drinks every once in a while?	(A) No risk	(B) Slight risk	(C) Medium risk	(D) Great risk	(E) Don't know
63. How much risk of harming themselves (physically or otherwise) does a person run if they drink alcohol frequently?	(A) No risk	(B) Slight risk	(C) Medium risk	(D) Great risk	(E) Don't know
64. For you and your friends how easy or difficult is it to get alcohol?	(A) Very easy	(B) Easy	(C) Difficult	(D) Very Difficu lt	(E) Don't know
65. How much risk of harming themselves (physically or otherwise) does a person run if they consume crack or coca base every once in a while?	(A) No risk	(B) Slight risk	(C) Medium risk	(D) Great risk	(E) Don't know
66. How much risk of harming themselves (physically or otherwise) does a person run if they consume crack or coca base frequently?	(A) No risk	(B) Slight risk	(C) Medium risk	(D) Great risk	(E) Don't know
67. For you and your friends how easy or difficult is it to get crack o coca base?	(A) Very easy	(B) Easy	(C) Difficult	(D) Very Difficu lt	(E) Don't know
68. For you and your friends how easy or difficult is it to get Ecstasy?	(A) Very easy	(B) Easy	(C) Difficult	(D) Very Difficu lt	(E) Don't know
69. How much risk of harming themselves (physically or otherwise) does a person run if they take Ecstasy every	(A) No risk	(B) Slight risk	(C) Medium risk	(D) Great risk	(E) Don't know

once in a while?					
70. How much risk of harming themselves (physically or otherwise) does a person run if they take Ecstasy frequently?	(A) No risk	(B) Slight risk	(C) Medium risk	(D) Great risk	(E) Don't know
71. For you and your friends how easy or difficult is it to get inhalants like glue, gasoline, etc?	(A) Very easy	(B) Easy	(C) Difficult	(D) Very Difficult	(E) Don't know
72. How much risk of harming themselves (physically or otherwise) does a person run if they sniff glue, gasoline, etc. every once in a while?	(A) No risk	(B) Slight risk	(C) Medium risk	(D) Great risk	(E) Don't know
73. How much risk of harming themselves (physically or otherwise) does a person run if they sniff inhalants like this frequently?	(A) No risk	(B) Slight risk	(C) Medium risk	(D) Great risk	(E) Don't know
74. How much risk of harming themselves (physically or otherwise) does a person run if they smoke marihuana once in a while?	(A) No risk	(B) Slight risk	(C) Medium risk	(D) Great risk	(E) Don't know
75. How much risk of harming themselves (physically or otherwise) does a person run if they smoke marihuana frequently?	(A) No risk	(B) Slight risk	(C) Medium risk	(D) Great risk	(E) Don't know
76. For you and your friends how easy or difficult is it to get marihuana?	(A) Very easy	(B) Easy	(C) Difficult	(D) Very Difficult	(E) Don't know

Section 4: Questions over the frequency of different aspects in the life of a Venezuelan youth.

Please answer all of the questions even though the answers do not exactly fit your experience. Mark "A, B, C, D, or E" according to your experience. Try not to leave any answer blank. Indicate your answer by filling in the corresponding circle on your answer sheet.

The following questions refer to the last year.	Not even once this last year	Every once in a great while during the year	Several times a month	Several times each week	Once a day or more

77. Watch television or play video games at home.	A	B	C	D	E
78. Play a sport like soccer, baseball, mountain clima, etc.	A	B	C	D	E
79. Play a musical instrument	A	B	C	D	E
80. Work for money	A	B	C	D	E
81. Go out on dates	A	B	C	D	E
82. Smoke cigarettes	A	B	C	D	E
83. Spend time with my family	A	B	C	D	E
84. Gamble for money (dice, horses, cards, etc.)	A	B	C	D	E
85. Pray or read the Bible	A	B	C	D	E
86. Do housework like cook, clean, etc.	A	B	C	D	E
87. Smoke marihuana	A	B	C	D	E
88. Go to religious activities like classes, social activities, retreats, etc.	A	B	C	D	E
89. Go to concerts (rock, reguetón, etc.)	A	B	C	D	E
90. Drink alcohol, (beer, anís, etc.)	A	B	C	D	E
91. Do homework and study for tests	A	B	C	D	E
92. Do crack, coca base, or cocaine	A	B	C	D	E
93. Go dancing	A	B	C	D	E
94. Go with friends to shopping centers, movies	A	B	C	D	E
95. Take heroin	A	B	C	D	E

Section 5: Questions about the age you first had an opportunity to try, or that you did try a substance

Write the age you were when you first had an opportunity to try the drug mentioned in the question, or the age you were the first time you tried the drug mentioned in the question. Opportunity means that you could have tried the drug had you wanted to, but you may have decided not to at that time. For example if you were 7 the first time you an opportunity try cigarettes but you didn't try them, then write "7" in the space provided. The first time you tried a drug refers to the first time that you actually consumed the drug. For example if you were 10 years old the first time you smoked a cigarette then write "10" in the space provided. It may also be that the first time you had the opportunity to smoke a cigarette you did. Then place the same age in both spaces. If you never had an opportunity to smoke a cigarette then write "0" in the space provided. Likewise, if you never have smoked a cigarette, even though you have many opportunities, then write "0" in the space provided. For example, perhaps your first opportunity to smoke a cigarette was when you were 9 years old, but you, to this day have never smoked a

cigarette, then you would write "9" in the space provided for the question that asks about opportunity and a "0" in the question that asks about your age when you first smoked a cigarette.

1. Regarding cigarettes: How old were you when you first had an opportunity to smoke a cigarette?	Age:
2. How old were you when you first smoked a cigarette?	Age:
3. Regarding alcohol: How old were you when you first had an opportunity to drink alcohol?	Age:
4. How old were you when you first drank alcohol?	Age:
5. Regarding crack, cocaine, or coca base: How old were you when you first had an opportunity to crack, cocaine, or coca base?	Age:
6. How old were you when you first tried crack, cocaine, or coca base?	Age:
7. Regarding Ecstasy: How old were you when you first had an opportunity to try Ecstasy?	Age:
8. How old were you when you first tried ecstasy?	Age:
9. Regarding sniffing glue, gasoline, or other inhalants: How old were you when you first had an opportunity to sniff inhalants like these?	Age:
10. How old were you when you first sniffed an inhalant like the ones mentioned?	Age:
11. Regarding the drug Cadrina: How old were you when you first had an opportunity to try Cadrina?	Age:
12. How old were you when you first tried Cadrina?	Age:
13. Regarding heroin: How old were you when you first had an opportunity to try heroin?	Age:
14. How old were you when you first tried heroin?	Age:
15. How old were you when you first took pills (that were not prescribed to you by a doctor) like valium, etc.?	Age:
16. Regarding marihuana: How old were you when you first had an opportunity to smoke marihuana?	Age:
17. How old were you when you first smoked marihuana?	Age:

Thank you very much for participating in this survey. Please place the answer sheet, the PACARDO questionnaire, and the pencil back into the envelope and place it in the box as we pass by to collect it. We will be giving you a ballpoint pen as a gesture of our appreciation for having participated in this study today.

Are there any questions before we finish for the day?

APPENDIX C

MAMBI SURVEY

Guide for the Observation of the school, classroom environment

In every school, the principal and teacher whose classroom is participating in the survey will fill out this evaluation (if there are 2 classrooms participating, both teachers should fill out the forms).

The entire assessment group should also fill out the evaluation forms.

There are questions that pertain to solely one individual in the group. The others can simply leave those questions blank.

The principal assessor should fill out the top part of the form regarding the identifiers before distributing.

This evaluation should be completely quickly and simply to give a first impression.

Name of Researcher	Today's date:	Scheduled time:
School Number		
Job title of the person completing this survey:		

TO BE COMPLETED BY THE PRINCIPAL ONLY:

This school is (mark all that apply)?:

1. ☐Public
2. ☐Religious (which religion) _____
3. ☐Bilingual
4. ☐Completely Private
5. ☐Semi-private

FOR THE PRINCIPAL, TEACHER, AND INTERVIEWER:

	Description of the classroom (Mark an X in the correct box)	**1.Yes**	**2.No**	**3.Can't tell**
1.	Are there desks and chairs for every student?			
2.	Do the students appear comfortable in their desks?			
3.	Is there a place where students can store books and food?			
4.	Is the classroom decorated with the student's work, drawings, maps and educational posters?			
5.	Is there a blackboard in every classroom?			
6.	Is there chalk or a writing instrument to write on the board?			
7.	Is the classroom well ventilated?			
8.	Does the classroom appear clean?			
9.	Do students have there own textbooks?			
10.	Are there extra curricular activities available (e.g., sports, clubs, etc.)?			

	Does the school have the following? (Mark an X in the correct box)	1.Yes	2.No	3.Can't tell
11.	Does it have a playing field?			
12.	Does it have a gymnasium?			
13.	Does it have a library?			
14.	Does it have a cafeteria or dining room?			
15.	Does it have a patio or courtyard?			
16.	Is there graffiti on the walls?			
17.	Is there barbed wire on top of the fence or wall surrounding the school?			
18.	Is there broken glass on top of the fence surrounding the school?			
19.	Are there computers with Internet access in the principal's office?			
20.	Are there computers with Internet access for the students to use?			
22.	Is there a security system in the school?			
23.	Is there a guard on school grounds?			
24.	Are access doors kept closed?			
25.	Are there bulletin boards on the walls with up-to-date announcements?			
26.	Is the roof in good condition (signs of water damage)?			
27.	Are there places that showcase student achievements?			
28.	Are there broken windows?			
29.	Are there broken walls or those having holes?			
30.	Is the paint peeling on the walls, doors, or window frames?			
31.	Are there doors that are off the hinges or that are broken?			

	Describe the area around the school (Mark an X in the correct box)	1.Yes	2.No	3.Can't tell
32.	Is there rubbish on the streets or around the buildings and houses in the neighborhood?			
33.	Are there sidewalks in the streets around the school?			
34.	Do the houses surrounding the school appear well kept?			
35.	Is there a recreational park nearby?			
36.	Are there abandoned cars or cars being repaired in the streets?			
37.	Are there factories and warehouses around the school?			
38.	Are there stores and businesses around the school?			
39.	Are there billboards or public advertisements for tobacco around the school?			
40.	Are there billboards or public advertisements for alcohol around the school?			

GUIA DE OBSERVACION DEL MEDIO AMBIENTE DEL SALON, COLEGIO Y VECINADARIO (MAMBI)

En cada colegio, el director y maestro de del salón que participa en la encuesta va llenar esta evaluación (si hay dos salones de clases en la encuesta entonces ambos maestros pueden llenar la evaluación).

Todo el personal que esta en el equipo de asesoramiento también lo llena al terminar el asesoramiento.

Hay preguntas, al principio que le toca a solamente un individuo del grupo, (por ejemplo las preguntas administrativas solamente el director quien los contesta). Los demás lo pueden dejar en blanco.

El asesor principal llena la parte sobre identificación de cada cuestionario antes de darles al personal que lo va llenar.

Esta evaluación se completa en poco tiempo El propósito dar su primera impresión del medio ambiente del colegio.

Nombre del Investigador	Fecha						Tiempo:			
Número del Colegio										
Titulo de la persona completando la encuesta:										

Para Ser Completado Por El Director:

Esta Escuela Es (marca todos que apliquen)?:

A. ☐Publica
B. ☐Religiosa (cual religión) _____
C. ☐Bilingue
D. ☐Completamente Privada
E. ☐Semi-privada

PARA EL DIRECTOR FOR THE PRINCIPAL, TEACHER, AND INTERVIEWER:

	Descripción del salón de clase	SI (A)	No (B)	No Sé (C)
1.	¿Hay sillas y pupitres para cada estudiante?			
2.	¿Los estudiantes se ven cómodos en sus pupitres?			

3.	¿Hay lugares donde los estudiantes pueden guardar sus libros y comida?			
4.	¿El salón está decorado con trabajos de los estudiantes, dibujos, mapas o carteles de información educacional?			
5.	¿Hay pizarra en cada clase?			
6.	¿Hay tiza o con qué escribir en las pizarras?			
7.	¿La clase está ventilada?			
8.	¿La clase se ve limpia?			
9.	¿Los estudiantes tienen sus propios libros de texto?			

	Tiene el colegio lo siguiente?	SI (A)	No (B)	No Sé (C)
10.	¿Hay actividades después de las clases para los estudiantes (deportes, club, etc.)?			
11.	¿Tiene campo o parque para recreación?			
12.	¿Tiene gimnasio?			
13.	¿Tiene biblioteca?			
14.	¿Tiene cafetería o comedor?			
15.	¿Tiene patio?			
16.	Hay graffiti en las paredes y muros?			
17.	¿Hay alambre de púas encima de los muros que rodean el colegio?			
18.	¿Hay vidrios rotos encima de los muros que rodean el colegio?			
19.	¿Hay computadoras con conexión al Internet en la oficina del director?			
20.	¿Hay computadoras con conexión al Internet para uso de los estudiantes?			
22.	¿Hay sistema de seguridad en el colegio?			
23.	¿Hay guarda en el colegio?			
24.	¿Mantienen los portones de acceso cerrados?			
25.	¿Hay un lugar para anuncios?			
26.	¿El techo o cielo raso esta en mal estado? (señales de filtraciones)?			
27.	¿Hay un lugar que demuestra los logros de los estudiantes?			
28.	¿Hay ventanas rotas?			
29.	¿Hay paredes rotas o con huecos?			
30.	¿Faltan rejas o están deterioradas (faltan pintar)?			
31.	¿Hay puertas desmontadas o dañadas?			

	Describe el área alrededor el colegio	SI (A)	No (B)	No Sé (C)
32.	¿Hay basura en las calles o alrededor de los edificios/casas en el vecindario?			
33.	¿Hay aceras en las calles que rodean el colegio?			
34.	¿Las casas que rodean el colegio se ven bien cuidadas?			

35.	¿Hay algun parque recreativo?			
36.	¿Hay carros abandonados o siendo reparados en las calles?			
37.	¿Hay fabricas o almacenes en los alrededores del colegio?			
38.	¿Hay tiendas o negocios cerca?			
39.	¿Hay vallas publicitarias o anuncios para tabaco cerca del colegio?			
40.	¿Hay vallas publicitarias o anuncios para alcohol cerca del colegio?			

MICHIGAN STATE
UNIVERSITY

Initial IRB Application Approval

April 27, 2007

To: Adrian BLOW
3E Human Ecology
FCE
East Lansing, MI 48824

Re: **IRB # 07-320** Category: EXPEDITED 2-7
Approval Date: April 27, 2007
Expiration Date: April 26, 2008

Title: TOWARD AN ECO-DEVELOPMENTAL THEORY OF ADOLESCENT SUBSTANCE ABUSE

The Institutional Review Board has completed their review of your project. I am pleased to advise you that **your project has been approved.**

The committee has found that your research project is appropriate in design, protects the rights and welfare of human subjects, and meets the requirements of MSU's Federal Wide Assurance and the Federal Guidelines (45 CFR 46 and 21 CFR Part 50). The protection of human subjects in research is a partnership between the IRB and the investigators. We look forward to working with you as we both fulfill our responsibilities.

Renewals: IRB approval is valid until the expiration date listed above. If you are continuing your project, you must submit an ***Application for Renewal*** application at least one month before expiration. If the project is completed, please submit an ***Application for Permanent Closure.***

Revisions: The IRB must review any changes in the project, prior to initiation of the change. Please submit an ***Application for Revision*** to have your changes reviewed. If changes are made at the time of renewal, please include an ***Application for Revision*** with the renewal application.

Problems: If issues should arise during the conduct of the research, such as unanticipated problems, adverse events, or any problem that may increase the risk to the human subjects, notify the IRB office promptly. Forms are available to report these issues.

Please use the IRB number listed above on any forms submitted which relate to this project, or on any correspondence with the IRB office.

Good luck in your research. If we can be of further assistance, please contact us at 517-355-2180 or via email at IRB@msu.edu. Thank you for your cooperation.

Sincerely,

Peter Vasilenko, Ph.D.
SIRB Chair

c: Ronald Cox
2500 Teel Avenue
Lansing MI, 48910

OFFICE OF REGULATORY AFFAIRS
Human Research Protection Programs

BIOMEDICAL & HEALTH INSTITUTIONAL REVIEW BOARD (BIRB)

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SOCIAL SCIENCE/ BEHAVIORAL / EDUCATION INSTITUTIONAL REVIEW BOARD (SIRB)

202 Olds Hall
East Lansing, Michigan
48824-1046
517-355-2180
Fax: 517-432-4503

www.humanresearch.msu.edu
SIRB & BIRB: IRB@msu.edu
CRIRB: crirb@msu.edu

Michigan State University
Department of Family and Child Ecology

Project Title: Toward an Eco-Developmental Theory of Adolescent Substance Abuse.

Participant Informed Consent Form

PURPOSE: This research aims to learn more about how parents, teachers, and communities work together to protect their children from getting involved with drugs. The results from this research will be used to develop new prevention and treatment programs in Caracas for adolescents who have behavior problems or who get involved with drugs. These programs has received scientific support in other countries, but have never been developed for use in Venezuela. Your participation will shed light on how to best adapt these programs so that they can be implemented in Venezuela.

BENEFITS: Your participation in this study has some potential benefits to you. You may benefit by being valued as a credible and valuable resource in a project that has the potential to help teens and families as well as the school environment. Hopefully this will be a source of satisfaction and self-esteem for those who participate. You may benefit directly in the future by seeing a decrease in drug activity in your school, work, or neighborhood, and an increase in the quality of your relationships. Additionally, by lending your voice to this study, government agencies and other organizations, which support families and schools, may become more aware of and responsive to the needs of parents, teens, and schools.

RISKS: In any research study there are risks involved with participation. Participation in this study may lead you to think about issues related to your own family, or other relationships that make you feel uncomfortable, or bring back unpleasant memories. Likewise, some questions may make you think about past behavior that you are not particularly proud of. If you do experience some adverse effects, we encourage you to speak to a psychologist or counselor that you may know or to contact the psychologist whose information is provided below.

PARTICIPATION: Participation in this study consists of responding to a questionnaire that has been used with other schools in Panama, Costa Rica, Nicaragua, El Salvador, Honduras, Guatemala, and The Dominican Republic. The questionnaire asks you to respond to items concerning different aspects of the school environment and your students. Because of the above-mentioned risks, we want to emphasize that your participation in this study is voluntary. You have the right to not participate in this study at all, to refuse to answer any questions, or end your participation at any time, without penalty. It should take about 45 minutes of your time to complete the questionnaire. Your participation in this research project will not involve any

Subject Initials _____

Date_____

This consent form was approved by the Social Science/Behavioral/Education Institutional Review Board (SIRB) at Michigan State University. Approved 04/27/07 – valid through 04/26/08. This version supersedes all previous versions. IRB # 07-320.

additional costs to you beyond your time, and a ballpoint pen will be given to you in appreciation of your participation when you turn in the questionnaire. Additionally, we are giving the school a new laser printer in appreciation for participating in this study.

PRIVACY AND CONFIDENTIALITY: Information collected will be kept strictly confidential. This means that neither your name, the name of the school where you work, nor any other information that could be used to identify you will appear on any of the documents prepared as result of this study. A copy of this form is provided for your convenience in the event you need it as a reference for later questions or concerns.

QUESTIONS AND CONTACTS: If at any time you have questions or concerns about this study, you may contact Mr. Ronald Cox at 011-517-282-7152-3328, by email: coxronal@msu.edu, by mail: 107 Human Ecology, Michigan State University East Lansing, MI 48824, USA,. You may also contact Dr. Adrian Blow at 011-517-432-7092, by e-mail at blow@msu.edu, or by mail at 3E Human Ecology, Michigan State University, East Lansing, MI 48824. If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, please feel free to contact Dr. Peter Vasilenko by phone: 011-517-355-2180, e-mail: ucrihs@msu.edu or mail: 202 Olds Hall East Lansing, MI 48824, USA. If you would like to speak to someone about any discomfort you may feel as a result of participating in this study, Lic. Mariela Rodríguez is a competent inexpensive psychotherapist who practices in Caracas. Her number is 0414-257-9777.

If you agree to participate please sign and date this form on the line below. Your signature below indicates your voluntary agreement to participate in this study.

Name of Participant: _____

Signature: _____ Date: _____

Subject Initials _____

Date_____

This consent form was approved by the Social Science/Behavioral/Education Institutional Review Board (SIRB) at Michigan State University. Approved 04/27/07 – valid through 04/26/08. This version supersedes all previous versions. IRB # 07-320.

Michigan State University
Facultad de Ecología Familiar y del Niño

Proyecto: Hacia un teoría ecológica del desarrollo del abuso de drogas en los adolescentes venezolanos

Hoja de Consentimiento Informado

PROPOSITO: Este estudio tiene como objetivo aprender más acerca de como los padres, maestros y comunidades cooperan y colaboran para evitar que los niños se involucren en las drogas. Los resultados de este estudio serán empleados en el desarrollo de nuevos programas para la prevención y el tratamiento de adolescentes que tienen problemas de conducta y de consumo de drogas en Venezuela. Estos programas de tratamiento se han mostrado eficaces en otros países, pero nunca han sido desarrollados para uso en Venezuela. Tu participación alumbrará maneras en que podamos adaptar estos programas para que sean implementados en Venezuela.

BENEFICIOS: Tu participación en este estudio tiene el potencial de beneficiarte. Tal vez te beneficies por sentirte valorizado(a) como una fuente respetada de información valiosa para un proyecto que tiene potencial para ayudar a los adolescentes y sus familias, tanto como la misma escuela. Esperamos que esto sea causa de mucha satisfacción y autoestima para quienes participan. Tal vez también seas beneficiario en el futuro de un descenso en actividades relacionadas con la droga en tu trabajo o vecindario, y un aumento en la calidad de tus relaciones personales. Además, al prestar tu apoyo al desarrollo de este estudio, entidades gubernamentales y otros organismos que se interesan en ayudar a la familia venezolana y a las escuelas puedan llegar a estar más atentos a las necesidades de los padres, adolescentes, y escuelas.

RIESGOS: En toda investigación científica existen riesgos para los que participan en dichas investigaciones. Al participar en este estudio pueda que te lleve a pensar en temas relacionados con tu familia que te incomoden o te hagan recordar de momentos no placenteros en tu vida. Si experimentas algunos efectos adversos por haber participado en este estudio, te animamos a hablar con un psicólogo o consejero que conozcas o contactar el psicólogo cuya información está al final de este documento.

PARTICIPACION: Participar en este estudio consiste en responder a un cuestionario que ha sido implementado en escuelas en Panamá, Costa Rica, Nicaragua, El Salvador, Honduras, Guatemala, y República Dominicana. El cuestionario te pregunta sobre diferente aspectos del ambiente escolar y los estudiantes. Debido a los riesgos previamente mencionados, enfatizamos

Subject Initials _____

Date_____

Esta forma de consentimiento fue aprobada por el Consejo Institucional de Revision (SIRB) de Ciencias Sociales/Conductual/Educativo de la Universidad del Estado de Michigan. Aprobada a partir de 04/27/07 hasta 04/26/08. Esta version reemplaza a todas las versiones anteriores. IRB#07-320.

que tu participación en este estudio es voluntaria. Tienes el derecho de decidir a no participar en este estudio, de rehusar a contestar cualquier pregunta, o terminar tu participación en cualquier momento, sin ninguna penalidad. Se tomará aproximadamente 45 minutos para llenar el cuestionario, y tu participación en este proyecto no te ocasionará ningún costo más allá que el tiempo que inviertes. En agradecimiento por su participación en el estudio te estaremos obsequiando un bolígrafo y al colegio una impresora láser.

PRIVACIDAD Y CONFIDENCIALIDAD: La información recogida en este estudio se mantendrá en forma confidencial. Esto significa que ni tu nombre, ni el nombre de la escuela donde trabajas, ni cualquier otro dato que se podría usar para identificarte, aparecerá en los documentos que se desarrollarán relacionados con este estudio. Se te está dando una copia de esta hoja como referencia en el caso que tienes alguna pregunta en el futuro.

PREGUNTAS Y CONTACTO: Si en cualquier momento tienes algunas preguntas o preocupaciones acerca de este estudio, puedes contactar al Sr. Ronald Cox a: 001-517-282-7152 o por correo electrónico a: coxronal@msu.edu, o por correo normal a: 107 Human Ecology, Michigan State University East Lansing, MI 48824, USA. También puedes contactar a Sr. Cox en Venezuela al 0212-915-0455. También puedes contactar al Dr. Adrian Blow at 001-517-432-7092, por correo electrónico a blow@msu.edu, o por correo normal a 3E Human Ecology, Michigan State University, East Lansing, MI 48824 USA. En el caso que tengas preguntas o preocupaciones en cuanto a tus derechos en este estudio, o te sientes disgustado con cualquier aspecto de este estudio, por favor comunícate con el Dr. Peter Vasilenko por teléfono a: 001-517-355-2180, por correo electrónico a: irb@msu.edu o por correo normal a: 202 Olds Hall East Lansing, MI 48824, USA. Si gustas hablar con algún profesional acerca de cualquier incomodidad que sientas por causa de tu participación en este estudio, la psicóloga Lic. Mariela Rodríguez está al tanto de este estudio y está dispuesta a ayudarte aquí en Caracas. Su número es: 0414-257-9777

Si estás de acuerdo en participar en el presente estudio, por favor coloca tu nombre y firma el documento. Tu firma indica tu participación voluntaria en este estudio.

Nombre del participante: _____

Firma: _____ Fecha: _____

Subject Initials _____

Date_____

Esta forma de consentimiento fue aprobada por el Consejo Institucional de Revision (SIRB) de Ciencias Sociales/Conductual/Educativo de la Universidad del Estado de Michigan. Aprobada a partir de 04/27/07 hasta 04/26/08. Esta version reemplaza a todas las versiones anteriores. IRB#07-320.

Michigan State University
Facultad de Ecología Familiar y del Niño

Proyecto: Hacia una teoría ecológica del desarrollo del abuso de drogas en los adolescentes venezolanos

Hoja de Consentimiento Informado de los Representantes para un Participante Menor

Estimado Representante:

Un grupo de investigadores de la Universidad Estatal de Michigan quiere aprender mas acerca de cómo reducir el consumo de bebidas alcohólicas y otras drogas y planificar servicios para ayudar a los jóvenes que los requieran. Han sido desarrollados algunos programas de prevención que funcionan con jóvenes, sus familias, y sus comunidades y están mostrándose eficaces en varias partes del mundo, y ahora hay interés en adaptarlos para su uso en Venezuela. Para tal fin, se hace necesario realizar una encuesta con jóvenes escolares en Caracas mediante un cuestionario anónimo que prueba diferentes aspectos de la salud y el comportamiento de los jóvenes, incluyendo el consumo de alcohol y drogas. El cuestionario ha sido utilizado con otros jóvenes en Panamá, Costa Rica, Nicaragua, El Salvador, Honduras, Guatemala y la República Dominicana. El cuestionario le hará preguntas a su hijo(a) acerca de su relación con su familia, amistades, maestros, religión, vecindario, y las drogas y el alcohol.

El director del plantel donde asiste(n) su(s) hijo(s) ha revisado el cuestionario y los procedimientos que serán implementados y ha dado su aprobación. La encuesta ha sido diseñada para ser anónima, es decir, que nadie sabrá que estudiante responde a las preguntas. Se instruirá a los estudiantes a no colocar sus nombres ni ninguna otra cosa que les podría identificar en ninguna parte del cuestionario. También se tendrá cuidado para que nadie pueda observar las respuestas de otra persona. Se tomará aproximadamente 45 minutos para llenar el cuestionario y la participación de su hijo(a) no le ocasionará ningún otro gasto más allá de su tiempo. En agradecimiento por su participación en el estudio le estaremos obsequiando a su hijo(a) un bolígrafo.

La participación en este estudio tiene el potencial de beneficiar a su hijo(a). Tal vez se beneficie por sentirte apreciado(a) como una fuente respetada de información valiosa para un proyecto que tiene potencial para ayudar a los adolescentes y sus familias, tanto como la misma escuela. Esperamos que esto sea causa de mucha satisfacción y autoestima para quienes participan. Tal vez también sea beneficiado(a) en el futuro por un descenso en actividades relacionados con la droga en su colegio, trabajo o vecindario, y por un aumento en la calidad de sus relaciones personales. Además, al prestar su apoyo al desarrollo de este estudio, entidades gubernamentales y otros organismos que se interesan en ayudar a la familia venezolana y a las escuelas puedan llegar a estar más atentos a las necesidades de los padres, adolescentes y escuelas.

En toda investigación científica existen riesgos para los que participan en dichas investigaciones. Al participar en este estudio pueda que a su hijo(a) se lleve a pensar en temas relacionados con su familia que le incomoden o le hagan recordar momentos no placenteros en su vida. Si es el caso que su hijo(a) experimenta algunos efectos adversos por haber participado en este estudio, le animaremos a hablar con su maestra(o) o con director(a) del plantel para que orienten a su hijo(a). Debido a los mencionados riesgos, queremos enfatizar que la participación de su hijo(a) en este estudio es de naturaleza voluntaria. El(Ella) tiene el derecho de no participar, de rehusar responder a cualquier

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pregunta, o descontinuar su participación en cualquier momento sin ninguna repercusión. Si su hijo(a) decide no participar, hay un aula de estudio supervisado donde puede hacer tareas mientras terminamos con el proyecto.

Si en cualquier momento tiene algunas preguntas o inquietudes acerca de este estudio, puede contactar al Sr. Ronald Cox a: 001-517-282-7152 o por correo electrónico a: coxronal@msu.edu, o por correo normal a: 107 Human Ecology, Michigan State University East Lansing, MI 48824, USA. También puede contactar al Sr. Cox en Venezuela al 0212-915-0455. También puedes contactar al Dr. Adrian Blow at 001-517-432-7092, por correo electrónico a blow@msu.edu, o por correo normal a: 3E Human Ecology, Michigan State University, East Lansing, MI 48824 USA. En caso que tenga preguntas o inquietudes en cuanto a los derechos de su hijo(a) en este estudio, o se siente disgustado con cualquier aspecto de este estudio, por favor comuníquese con el Dr. Peter Vasilenko por teléfono al: 001-517-355-2180, por correo electrónico a: irb@msu.edu o por correo normal a: 202 Olds Hall East Lansing, MI 48824, USA.

Por favor devuelva este documento al maestro(a) de su hijo(a) indicando si está de acuerdo o no está de acuerdo con la participación de su hijo(a) en este proyecto. Si no está de acuerdo con la participación de su hijo(a), él o ella será dirigido(a) a un lugar para hacer tareas mientras los demás estudiantes están llenando el cuestionario. Si no envía el documento permitiremos a su hijo(a) participar y el director(a) actuará como intercesor a favor del estudiante para asegurar que sus derechos son protegidos. Sin embargo, si no responde a esta notificación, su hijo(a) mantiene el derecho de no participar, de rehusar responder a cualquier pregunta o a terminar su participación en cualquier momento sin ninguna repercusión. Si hijo(a) decide no participar, será dirigido a un aula para estudiar mientras los demás estudiantes terminan el cuestionario.

Favor, indique su disposición en cuanto a la participación de su hijo(a) en el cuestionario a través de su firma al lado de la declaración que expresa su deseo. Por favor envíe esta carta a la maestra(o) de su hijo(a). Gracias.

Doy mi permiso para que mi hijo(a) participe en el estudio:

_____

Firma

NO doy mi permiso para que mi hijo(a) participe en el estudio:

_____

Firma

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Michigan State University
Department of Family and Child Ecology

Project Title: Toward an Eco-Developmental Theory of Adolescent Substance Abuse.

Parental Informed Consent Form for a Minor Participant

Dear Parents/Guardians:

A group of researchers from Michigan State University is attempting to learn more about how to prevent the spread of alcohol and drug use among the youth of Venezuela. Several prevention programs that work with children, their families and their communities have been developed, and are showing positive results in different parts of the world, and there is now interest in adapting these programs for use in Venezuela. In order to help with this project, we are looking to survey students from schools in Caracas using a questionnaire that touches on different aspects of health and behavior, including the consumption of alcohol and drugs. The questionnaire has been used with other adolescents in Panama, Costa Rica, Nicaragua, El Salvador, Honduras, Guatemala, and the Dominican Republic. The questionnaire asks your child to respond to items concerning different aspects of his/her relationship with family, peers, teachers, religion, neighborhood, and drugs and alcohol.

The principal of your child/children's school has reviewed the questionnaire that will be used and has approved of the procedures that the researchers have suggested. The survey has been designed to be anonymous, which means that no one will know how a student responds to a question. The students will be instructed not to place their name or anything else that could identify them on any part of the questionnaire. Also, great care is being taken so that no one will be able to observe any other person's responses. The survey will take about 45 minutes to complete, and your child's participation in this research project will not involve any costs beyond his or her time. We will be giving your child a ballpoint pen as a token of our appreciation for having participated in the study.

Your child/children's participation in this study has some potential benefits to him or her. Your child may benefit by being valued as a credible and valuable resource in a project that has the potential to help teens and families as well as the school environment. Hopefully this will be a source of satisfaction and self-esteem for those who participate. Your child may benefit directly in the future by seeing a decrease in drug activity in his/her school, work, or neighborhood, and an increase in the quality of his/her relationships. Additionally, as a result of your child/children's help in this study, government agencies and other organizations, which support families and schools, may become more aware of and responsive to the needs of parents, teens, and schools.

In any research study there are risks involved with participation. Participation in this study may lead your child to think about issues related to his/her own family, or other relationships that make him/her feel uncomfortable, or bring back unpleasant memories. Likewise, some questions may make him/her think about past behavior that they are not particularly proud of. If they do experience some adverse effects, we will encourage them to speak to their classroom teacher or to the school principal in order to address your child's concern. Because of the above-mentioned risks, we want to emphasize that your child's participation in this study is voluntary. He/she has the right to not participate in this study at all, to refuse to answer any questions, or end his/her participation at any time, without penalty. If he/she decides not to participate, there is a study hall set up for them.

This consent form was approved by the Social Science/Behavioral/Education Institutional Review Board (SIRB) at Michigan State University. Approved 04/27/07 – valid through 04/26/08. This version supersedes all previous versions. IRB # 07-0320.

If at any time you have questions or concerns about this study, you may contact Mr. Ronald Cox at 001-517-432-3328 (US number), by email: coxronal@msu.edu , by mail: 107 Human Ecology, Michigan State University East Lansing, MI 48824, USA, or at 0212-915-0455 in Venezuela. You may also contact Dr. Adrian Blow at 001-517-432-7092 (US number), by e-mail at blowa@msu.edu, or by mail at 3E Human Ecology, Michigan State University, East Lansing, MI 48824. If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, please feel free to contact Dr. Peter Vasilenko by phone: 001-517-355-2180 (US number), e-mail: ucrihs@msu.edu or mail: 202 Olds Hall East Lansing, MI 48824, USA.

Please return this letter to your child's school teacher indicating whether you agree or do not agree with your child's participation in this project. If you do not agree with your child's participation your child will be allowed to enter a study hall while the other students are responding to the questionnaire. If you do not respond to this letter then we will allow your child to participate and the school principal will act as an advocate to ensure that the rights of your child are protected. Even if you do not respond to this letter, your child will have the right to refuse to participate, to refuse to answer any questions, or to end participation at any time, without any penalty. If he/she decides not to participate, there will be a study hall set up for him/her to study while others are completing the survey.

Please indicate your agreement or disagreement for your child's participation in taking the questionnaire by signing next to the statement that expresses your desire. Please return this letter to your child's school teacher. Thank you.

I give my permission for my child to participate in the study:

_____

Signature

I DO NOT give my permission for my child to participate in the study:

_____

Signature

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Michigan State University
Department of Family and Child Ecology
Participant Informed Assent Form

Toward an Eco-Developmental Theory of Adolescent Substance Abuse.

PURPOSE: This research aims to learn more about how parents, teachers, and communities work together to protect their children from getting involved with drugs. The results from this research will be used to develop new prevention and treatment programs in Caracas for adolescents who have behavior problems or who get involved with drugs. These programs has received scientific support in other countries, but have never been developed for use in Venezuela. Your participation will shed light on how to best adapt these programs so that they can be implemented in Venezuela.

BENEFITS: Your participation in this study has some potential benefits to you. You may benefit by being valued as a credible and valuable resource in a project that has the potential to help teens and families as well as the school environment. Hopefully this will be a source of satisfaction and self-esteem for those who participate. You may benefit directly in the future by seeing a decrease in drug activity in your school, work, or neighborhood, and an increase in the quality of your relationships. Additionally, by lending your voice to this study, government agencies and other organizations, which support families and schools, may become more aware of and responsive to the needs of parents, teens, and schools.

RISKS: In any research study there are risks involved with participation. Participation in this study may lead you to think about issues related to your own family, or other relationships that make you feel uncomfortable, or bring back unpleasant memories. Likewise, some questions may make you think about past behavior that you are not particularly proud of. If you do experience some adverse effects, we encourage you to speak to your classroom teacher or to the school principal. They can help you, or they can set up a confidential meeting with the school psychologist for you if you feel that you need someone else to talk to. Or, you can contact the school psychologist directly yourself.

PARTICIPATION: Participation in this study consists of responding to a questionnaire that has been used with other adolescents in Panama, Costa Rica, Nicaragua, El Salvador, Honduras, Guatemala, and The Dominican Republic. The questionnaire asks you to respond to items concerning different aspects of your relationship with family, peers, teachers, religion, your neighborhood, and drugs and alcohol. Because of the above-mentioned risks, we want to emphasize that your participation in this study is voluntary. You have the right to not participate in this study at all, to refuse to answer any questions, or end your participation at any time, without penalty. If you do decide not to participate, there is a study hall set up for you.

PRIVACY AND CONFIDENTIALITY: Information collected will be anonymous. This means that neither your name nor any other information that could identify you will appear on any of the documents used in this study. You will select an envelope at random that has a

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Scantron sheet along with a questionnaire. The envelope, and the Scantron sheet will have a number on them that lets me know which school this is. However, since I don't know which number you will select, and nor do I know who you are, there is no way for anyone to link you with your responses to the items on the questionnaire. I would like for you to keep the form we are reading from for a reference in the event you have any questions later.

COSTS AND COMPENSATION: It should take about 45 minutes of your time to complete the questionnaire. Your participation in this research project will not involve any additional costs to you beyond your time. A $5.00 gift card will be given to you in appreciation of your participation when you turn in the envelope with the Scantron.

QUESTIONS AND CONTACTS: If at any time you have questions or concerns about this study, you may contact Mr. Ronald Cox at 517-432-3328, by email: coxronal@msu.edu , by mail: 107 Human Ecology, Michigan State University East Lansing, MI 48824, USA, or in 0212-915-0455. You may also contact Dr. Adrian Blow at 517-432-7092, by e-mail at blow@msu.edu, or by mail at 3E Human Ecology, Michigan State University, East Lansing, MI 48824. If you have questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, please feel free to contact Dr. Peter Vasilenko by phone: 517-355-2180, e-mail: ucrihs@msu.edu or mail: 202 Olds Hall East Lansing, MI 48824, USA.

If you agree to participate please stay seated and you will be given a questionnaire. Your continued presence in the classroom indicates your voluntary agreement to participate in this study. If you do not agree to be involved in the study then you may go with your teacher at this time to a study hall.

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Michigan State University
Facultad de Ecología Familiar y del Niño
Hoja de Asentimiento Informado

Hacia una teoría ecológica del desarrollo del abuso de drogas en los adolescentes venezolanos

PROPOSITO: Este estudio tiene como objetivo aprender más acerca de como los padres, maestros y comunidades cooperan y colaboran para evitar que los niños se involucren en el consumo de drogas. Los resultados de este estudio serán empleados en el desarrollo de nuevos programas para la prevención y el tratamiento de adolescentes que tienen problemas de conducta y de consumo de drogas en Venezuela. Estos programas de tratamiento se han mostrado eficaces en otros países, pero nunca han sido desarrollados para uso en Venezuela. Tu participación alumbrará maneras en que podamos adaptar estos programas para que sean implementados en este país.

BENEFICIOS: Tu participación en este estudio tiene el potencial de beneficiarte, tal vez por sentirte valorizado(a) como una fuente importante de información valiosa para un proyecto que tiene potencial para ayudar tanto a los adolescentes y sus familias, como a la misma escuela. Esperamos que esto sea causa de mucha satisfacción y contribuya en la autoestima para quienes participan. Tal vez también seas beneficiario en el futuro con un descenso en actividades relacionadas con la droga en tu colegio, trabajo o vecindario, y un aumento en la calidad de tus relaciones personales. Además, al prestar tu apoyo al desarrollo de este estudio, entidades gubernamentales y otros organismos que se interesan en ayudar a la familia venezolana y a las escuelas podrían llegar a estar más atentos a las necesidades de los padres, adolescentes y escuelas.

RIESGOS: En toda investigación científica existen riesgos para los que participan en dichas investigaciones. Participar en este estudio podría hacerte pensar en temas relacionados con tu familia que te incomoden o te hagan recordar momentos no placenteros en tu vida. Si experimentas algunos efectos adversos por haber participado en este estudio, te animamos a hablar con tu maestra o director del colegio. Ellos te pueden ayudar, o te pueden buscar una cita confidencial con el psicólogo del colegio, si es que te hace falta alguien más con quien hablar. O también puedes contactar al psicólogo directamente.

PARTICIPACION: Participar en este estudio consiste en responder a un cuestionario que ha sido implementado con jóvenes en Panamá, Costa Rica, Nicaragua, El Salvador, Honduras, Guatemala y la República Dominicana. El cuestionario te pregunta sobre diferentes aspectos de tu relación con tu familia, amistades, maestros, religión, vecindario, las drogas y el alcohol.

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Debido a los riesgos previamente mencionados, enfatizamos que tu participación en este estudio es voluntaria. Tienes el derecho de decidir a no participar en este estudio, de rehusar a contestar cualquier pregunta, o terminar tu participación en cualquier momento, sin ninguna penalidad. Si decides no participar hay un aula de estudio supervisado donde puedes hacer tareas mientras terminamos con el proyecto.

PRIVACIDAD Y CONFIDENCIALIDAD: La información recogida en este estudio se mantendrá en forma anónima. Esto significa que ni tu nombre, ni cualquier otro dato que se podría usar para identificarte, aparecerá en el cuestionario o la hoja de respuestas. Seleccionarás un sobre al lazar que tiene una hoja de respuestas junto con un cuestionario. El sobre, y la hoja de respuesta tiene un número que nos permite saber a cual colegio corresponde la data. Sin embargo, debido a que no sé cual número vas a seleccionar, ni quien eres, es imposible que alguien relacione una hoja de respuestas con una persona. Quiero que preserves la hoja de la cual estamos leyendo para una referencia en caso de que tengas alguna pregunta en el futuro.

COSTOS Y RECOMPENSAS: Responder al cuestionario se llevará aproximadamente 45 minutos. Tu participación en este proyecto no debe costarte nada más allá que el tiempo que inviertes. Se te dará un obsequio en agradecimiento por tu participación al terminar con el cuestionario.

PREGUNTAS Y CONTACTO: Si en cualquier momento tienes algunas preguntas o inquietudes acerca de este estudio, puedes contactar al Sr. Ronald Cox a: (517) 432-3328 o por correo electrónico a: coxronal@msu.edu, o por correo normal a: 107 Human Ecology, Michigan State University East Lansing, MI 48824, USA. También puedes contactar a Sr. Cox en Venezuela al 0212-915-0455. También puedes contactar al Dr. Adrian Blow at (517) 432-7092, por correo electrónico a blow@msu.edu, o por correo normal a: 3E Human Ecology, Michigan State University, East Lansing, MI 48824 USA. De tener preguntas o inquietudes en cuanto a tus derechos en este estudio, o te sientes disgustado con cualquier aspecto de este estudio, por favor comunícate con el Dr. Peter Vasilenko por teléfono a: (517) 355-2180, por correo electrónico a: irb@msu.edu o por correo normal a: 202 Olds Hall East Lansing, MI 48824, USA.

Si estás de acuerdo en participar en el presente estudio, mantente sentado y se te dará un cuestionario. Tu presencia en el salón de clase indica tu participación voluntaria en este estudio. Si no desees participar en el estudio, puedes acompañar a tu profesor a otra aula para hacer tareas.

Esta forma de consentimiento fue aprobada por el Consejo Institucional de Revision (SIRB) de Ciencias Sociales/Conductual/Educativo de la Universidad del Estado de Michigan. Aprobada a partir de 04/27/07 hasta 04/26/08. Esta version reemplaza a todas las versiones anteriores. IRB#07-320.

Michigan State University
Facultad de Ecología Familiar y del Niño

Proyecto: Hacia una teoría ecológica del desarrollo del abuso de drogas en los adolescentes venezolanos

Hoja de Asentimiento Informado

PROPOSITO: Este estudio tiene como objetivo aprender más acerca de como los padres, maestros, y comunidades cooperan y colaboran para evitar que los niños se involucren en las drogas. Los resultados de este estudio serán empleados en el desarrollo de nuevos programas para la prevención y el tratamiento de adolescentes que tienen problemas de conducta y de consumo de drogas en Venezuela. Estas programas de tratamiento se han mostrado eficaces en otros países, pero nunca han sido desarrollados para uso en Venezuela. Tu participación alumbrará maneras en que podamos adaptar estas programas para que sean implementadas en Venezuela.

BENEFICIOS: Tu participación en este estudio tiene el potencial de beneficiarte. Tal vez te beneficies por sentirte valorizado(a) como una fuente respetada de información valiosa para un proyecto que tiene potencial para ayudar a los adolescentes y sus familias, tanto como la misma escuela. Esperamos que esto sea causa de mucha satisfacción y autoestima para quienes participan. Tal vez también seas beneficiario en el futuro de un descenso en actividades relacionados con la droga en tu colegio, trabajo, o vecindario, y un aumento en la calidad de tus relaciones personales. Además, al prestar tu apoyo al desarrollo de este estudio, entidades gubernamentales y otros organismos que se interesan en ayudar a la familia venezolana y a las escuelas puedan llegar a estar más atentos a las necesidades de los padres, adolescentes, y escuelas.

RIESGOS: En toda investigación científica existen riesgos para los que participan en dichas investigaciones. Al participar en este estudio pueda que te lleve a pensar en temas relacionados con tu familia que te incomoden o te hagan recordar de momentos no placenteros en tu vida. Si experimentas algunos efectos adversos por haber participado en este estudio, te animamos a hablar con tu maestra o director del colegio. Ellos te pueden ayudar, o te pueden buscar una cita confidencial con el psicólogo del colegio, si es que te hace falta alguien más con quien hablar. O, también puedes contactar al psicólogo directamente.

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PARTICIPACION: La participación en este estudio consiste en responder a un cuestionario que ha sido implementado con jóvenes en Panamá, Costa Rica, Nicaragua, El Salvador, Honduras, Guatemala, y República Dominicana. El cuestionario te pregunta sobre diferentes aspectos de tu relación con tu familia, amistades, maestros, religión, vecindario, y las drogas y el alcohol. Debido a los riesgos previamente mencionados, enfatizamos que tu participación en este estudio es voluntaria. Tienes el derecho de decidir a no participar en este estudio, de rehusar a contestar cualquier pregunta, o terminar tu participación en cualquier momento, sin ninguna penalidad. Si decides no participar hay un aula de estudio supervisado donde puedes hacer tareas mientras terminamos con el proyecto. Se tomará aproximadamente 45 minutos para llenar el cuestionario, y tu participación no te ocasionará ningún otro gasto más allá de tu tiempo. En agradecimiento por tu participación en el estudio te estaremos obsequiando un bolígrafo.

PRIVACIDAD Y CONFIDENCIALIDAD: La información recogida en este estudio se mantendrá en forma anónima. Esto significa que ni tu nombre, ni cualquier otro dato que se podría usar para identificarte aparecerá en el cuestionario o en la hoja de respuestas. Seleccionarás un sobre al lazar que tiene una hoja de respuestas junto con un cuestionario. El sobre y la hoja de respuesta tiene un número que nos permite saber al cual colegio corresponde la data. Sin embargo, debido a que no sé cual número vas a seleccionar, ni quien eres, es imposible que alguien relacione una hoja de respuestas con una persona. Quiero que preserves la hoja de la cual estamos leyendo para una referencia en el caso que tienes alguna pregunta en el futuro.

PREGUNTAS Y CONTACTO: Si en cualquier momento tienes algunas preguntas o preocupaciones acerca de este estudio, puedes contactar al Sr. Ronald Cox a: 001-517-432-3328 o por correo electrónico a: coxronal@msu.edu, o por correo normal a: 107 Human Ecology, Michigan State University East Lansing, MI 48824, USA. También puedes contactar a Sr. Cox en Venezuela a: 0212-915-0455. También puedes contactar al Dr. Adrian Blow at 001-517-432-7092, por correo electrónico a blow@msu.edu, o por correo normal a 3E Human Ecology, Michigan State University, East Lansing, MI 48824 USA. En el caso que tengas preguntas o preocupaciones en cuanto a tus derechos en este estudio, o te sientes disgustado con cualquier aspecto de este estudio, por favor comunícate con el Dr. Peter Vasilenko por teléfono a: 001-517-355-2180, por correo electrónico a: irb@msu.edu o por correo normal a: 202 Olds Hall East Lansing, MI 48824, USA.

Si estás de acuerdo en participar en el presente estudio, mantente sentado y se te dará un cuestionario. Tu presencia en el salón de clase indica tu participación voluntaria en este estudio. Si no desees participar en el estudio, puedes acompañar a tu maestra a otra aula para hacer tareas.

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Michigan State University
Facultad de Ecología Familiar y del Niño
Hoja de Consentimiento Informado

Hacia un teoría ecológica del desarrollo del abuso de drogas en los adolescentes venezolanos

PROPOSITO: Este estudio tiene como objetivo aprender más acerca de como los padres, maestros y comunidades cooperan y colaboran para evitar que los niños se involucren en las drogas. Los resultados de este estudio serán empleados en el desarrollo de nuevos programas para la prevención y el tratamiento de adolescentes que tienen problemas de conducta y de consumo de drogas en Venezuela. Estos programas de tratamiento se han mostrado eficaces en otros países, pero nunca han sido desarrollados para uso en Venezuela. Tu participación alumbrará maneras en que podamos adaptar estos programas para que sean implementadas en Venezuela.

BENEFICIOS: Tu participación en este estudio tiene el potencial de beneficiarte. Tal vez te beneficies por sentirte valorizado(a) como una fuente respetada de información valiosa para un proyecto que tiene potencial para ayudar tanto a los adolescentes y sus familias como a la misma escuela. Esperamos que esto sea causa de mucha satisfacción y contribuya en la autoestima para quienes participan. Tal vez también seas beneficiario en el futuro de un descenso en actividades relacionadas con la droga en tu trabajo o vecindario y un aumento en la calidad de tus relaciones personales. Además, al prestar tu apoyo al desarrollo de este estudio, entidades gubernamentales y otros organismos que se interesan en ayudar a la familia venezolana y a las escuelas puedan llegar a estar más atentos a las necesidades de los padres, adolescentes y escuelas.

RIESGOS: En toda investigación científica existen riesgos para los que participan en dichas investigaciones. Participar en este estudio podría llevarte a pensar en temas relacionados con tu familia que te incomoden o te hagan recordar momentos no placenteros en tu vida. Si experimentas algunos efectos adversos por haber participado en este estudio, te animamos a hablar con un psicólogo o consejero que conozcas o contactar el psicólogo cuya información está al final de este documento.

PARTICIPACION: Participar en este estudio consiste en responder a un cuestionario que ha sido implementado en escuelas en Panamá, Costa Rica, Nicaragua, El Salvador, Honduras, Guatemala y República Dominicana. El cuestionario pregunta sobre diferente aspectos del ambiente escolar y los estudiantes. Debido a los riesgos previamente mencionados, enfatizamos que tu participación en este estudio es voluntaria. Tienes el derecho de decidir no participar en

Subject Initials _____

Date_____

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este estudio, de rehusar a contestar cualquier pregunta, o terminar tu participación en cualquier momento, sin ninguna penalidad.

PRIVACIDAD Y CONFIDENCIALIDAD: La información recogida en este estudio se mantendrá en forma confidencial. Esto significa que ni tu nombre, ni el nombre del plantel donde trabajas, ni cualquier otro dato que se podría usar para identificarte, aparecerá en los documentos que se desarrollarán relacionados con este estudio. Se te está dando una copia de esta hoja como referencia en el caso que tienes alguna pregunta en el futuro.

COSTOS Y RECOMPENSAS: Responder el cuestionario se llevará aproximadamente 45 minutos. Tu participación en este proyecto no debe costarte nada más allá que el tiempo que inviertes. Se te dará un pequeño obsequio en agradecimiento por tu participación al terminar con la recolección de datos.

PREGUNTAS Y CONTACTO: Si en cualquier momento tienes algunas preguntas o inquietudes acerca de este estudio, puedes contactar al Sr. Ronald Cox a: (517) 432-3328 o por correo electrónico a: coxronal@msu.edu, o por correo normal a: 107 Human Ecology, Michigan State University East Lansing, MI 48824, USA. También puedes contactar a Sr. Cox en Venezuela al 0212-915-0455. También puedes contactar al Dr. Adrian Blow at (517) 432-7092, por correo electrónico a blow@msu.edu, o por correo normal a: 3E Human Ecology, Michigan State University, East Lansing, MI 48824 USA. En el caso que tengas preguntas o inquietudes en cuanto a tus derechos en este estudio, o te sientes disgustado con cualquier aspecto de este estudio, por favor comunícate con el Dr. Peter Vasilenko por teléfono a: (517) 355-2180, por correo electrónico a: irb@msu.edu o por correo normal a: 202 Olds Hall East Lansing, MI 48824, USA. Si gustas hablar con algún profesional acerca de cualquier incomodidad que sientas por causa de tu participación en este estudio, la psicóloga Lic. Mariela Rodríguez está al tanto de este estudio y está dispuesta a ayudarte aquí en Caracas. Su número es: 0414-257-9777

Si estás de acuerdo en participar en el presente estudio, por favor coloca tu nombre y firma el documento. Tu firma indica tu participación voluntaria en este estudio.

Nombre del participante: _____

Firma: _____ Fecha: _____

Subject Initials _____

Date _____

Esta forma de consentimiento fue aprobada por el Consejo Institucional de Revision (SIRB) de Ciencias Sociales/Conductual/Educativo de la Universidad del Estado de Michigan. Aprobada a partir de 04/27/07 hasta 04/26/08. Esta version reemplaza a todas las versiones anteriores. IRB#07-320.

APPENDIX E

REPÚBLICA BOLIVARIANA DE VENEZUELA
MINISTERIO DE EDUCACIÓN
Y DEPORTES

ZONA EDUCATIVA DEL DISTRITO CAPITAL
Ciudad

N° 1703-06

Caracas, 28 de julio de 2.006.

Ciudadano
SR. RONALD COX
Presente.-

Me dirijo a usted, en atención a su comunicación de fecha 21-06-2.006 recibida en esta Zona Educativa el 21-07-2.006 mediante la cual da a conocer Proyecto de Investigación creado por la Universidad Estatal de Michigan, que tiene por objeto tratar en rasgos generales el uso de las drogas por parte de los adolescentes, por tal motivo solicita autorización para ingresar a los planteles a los fines de aplicar encuesta para recoger información respecto a los factores de riesgo que se relacionan con el uso de dichas sustancias. Al respecto tengo a bien informarle que este Despacho ve con agrado este tipo de proyecto que favorece a nuestra población estudiantil de jóvenes y adolescentes, y como Estado y responsable de los mismos tenemos la obligación de asegurar que reciban la información veraz, plural y adecuada a su desarrollo. En tal sentido, por la presente se le autoriza para desarrollar la actividad propuesta una vez que hallan sido revisados y aprobados por la autoridad educativa competente de cada Distrito Escolar y bajo supervisión de los mismos, los instrumentos que serán utilizados para tal fin. Dicha autorización se concede en virtud a lo señalado en el Articulo 51 de la Ley Orgánica para la Protección del Niño y del Adolescente en relación a la protección contra sustancias alcohólicas, estupefacientes y sicotrópicas que establece:

"El Estado con la activa participación de la sociedad, debe garantizar políticas y programas de prevención contra el uso ilícito de sustancias alcohólicas, estupefacientes y sicotrópicas..."

Así mismo le agradezco que al finalizar el proyecto informe a esta Dependencia sobre los resultados del mismo.

Atentamente,

PROF. ANDRES RODRIGUEZ
DIRECTOR DE LA ZONA EDUCATIVA
DEL DISTRITO CAPITAL

REPÚBLICA BOLIVARIANA DE VENEZUELA
MINISTERIO DE EDUCACIÓN Y DEPORTES
ZONA EDUCATIVA Nº 1
DISTRITO CAPITAL

ZEDC/AJ/LC/MN/at.

"2.006 AÑO BICENTENARIO DEL GENERAL FRANCISCO DE MIRANDA Y DE LA PARTICIPACIÓN PROTAGONICA Y DEL PODER POPULAR"

REPÚBLICA BOLIVARIANA DE VENEZUELA
MINISTERIO DE EDUCACIÓN Y DEPORTES

ZONA EDUCATIVA DEL DISTRITO CAPITAL
DISTRITO ESCOLAR Nº 2
Ciudad.-

Caracas, 14 de Julio del 2006

Ciudadano:
Mr. Ronald Cox
107 Human Ecology Building
Dept. Of Family and child Ecology
Michiganm State University
East Lansing, MI

Estimado Sr. Cox,

Nos complace informarnos de su interés por el bienestar de la familia venezolana.

Estamos seguros de que el proyecto de investigación sobre factores de riesgo y de protección en el consumo de drogas hará una contribución importante en la lucha por proteger a nuestra juventud contra este problema.

Sírvase esta carta para informarle de nuestro deseo de colaborar con Ud. y la Universidad de Michigan State en llevar a cabo el proyecto planteado. Una vez revisados y aprobados los instrumentos que serán utilizados en el proyecto, nos parece bien ofrecerle los planteles del Distrito Escolar N° 2 del Distrito Capital, para encuestar a los estudiantes de básica, media, diversificada y profesional (de 12 a 17 años), y entrevistar a maestros y otro personal que desempeña labores en dichos planteles.

Además entendemos que será necesario facilitarle el contacto con los padres y representantes de los estudiantes con el fin de lograr el consentimiento apropiado para que sus representados participen en el estudio planteado.

De nuevo le expresamos nuestra complacencia por su preocupación por el mejoramiento de nuestra sociedad a través del estudio del consumo de drogas entre los jóvenes Venezolanos y quedamos en espera de un informe detallado de los hallazgos al finalizar el estudio.

Sin otro particular a que hacer referencia, quedo de usted.

Atentamente.

PROF. MARIA ISABEL DUARTE
JEFA DEL DISTRITO ESCOLAR N° 2

DTTO N°2/MID/MS/yh

"2006 AÑO BICENTENARIO DEL JURAMENTO DEL GENERALISIMO FRANCISCO DE MIRANDA Y DE LA PARTICIPACION PROTAGONICA Y DEL PODER POPULAR"

República Bolivariana de Venezuela
Ministerio de Educación y Deportes

Zona Educativa del Distrito Capital
Distrito Escolar N° 4
Caricuao - Caracas

Caracas, 25 de julio de 2006

Licenciado
Francisco Villamediana
Coordinador Convenio (MED-CEV-CPE)
E.R.C.E.
Presente

Estimado Lic. ***Villamediana:***

Me dirijo a usted cordialmente en ocasión de saludarle y a la vez dar respuesta a su comunicación de fecha 12 de julio del año en curso, donde nos recomienda al ciudadano ***Msc., Ronald B. Cox****, (investigador de la Universidad Estatal de Michigan), el cual aplicará un Instrumento para un proyecto, sobre los factores que inciden en el consumo de drogas en jóvenes de edades comprendidas entre 12 y 17 años, en algunos planteles adscritos a este Distrito Escolar, los cuales se mencionan a continuación:*

N°	PLANTEL	DIRECTOR(A)
01	U.E.N. "Juan Lovera"	Prof. Edilia Chávez
02	U.E.N. "Roberto Martínez Centeno"	Prof. Hilda García
03	U.E.N. Liceo "Caricuao"	Prof. Carlos Monsalve
04	U.E.N. "Rafael Seijas"	Prof. María Urbina
05	E.T. "Francisco Fajardo"	Prof. Xiomara Valderrama

Sin más a que hacer referencia y agradeciendo el aporte por el mejoramiento de nuestra sociedad, a través de dicho proyecto entre los jóvenes venezolanos, se suscribe.

Atentamente,

Prof. Magaly Vásquez
Jefe Distrito Escolar N° 4

República Bolivariana de Venezuela Ministerio de Educación Cultura y Deportes Zona Educativa del Distrito Capital Distrito Escolar N° 4

DE4/MVide
25-07-2006

Dirección: Sector UD-3, Bloque 1, P.B., Caricuao. Telefax: 431-49-89

"2006, AÑO BICENTENARIO DEL JURAMENTO DEL GENERALÍSIMO FRANCISCO DE MIRANDA Y DE LA PARTICIPACIÓN PROTAGONICA Y DEL PODER POPULAR"

REPÚBLICA BOLIVARIANA DE VENEZUELA
MINISTERIO DE EDUCACIÓN Y DEPORTE
Unidad Educativa Nacional "PEDRO FONTES"
Montalbán – La Vega

Caracas, 14 de Julio de2006

Mr. Ronald Cox
107 Human Ecology Building
Dept. of Family and Child Ecology
Michigan State University
East Lansing, MI

Estimado Sr. Cox,

Nos complace informarnos de su interés por el bienestar de la Familia venezolana.

Estamos seguros de que el proyectote investigación sobre "Factores de riesgo y de protección en el consumo de drogas" hará una contribución importante en la lucha por proteger a nuestra juventud contra este flagelo.

Le comunico nuestro deseo de colaborar con usted y la Universidad de Michigan State en llevar a cabo el proyecto planteado. Una vez revisados y aprobados los instrumentos que serán utilizados en el proyecto, nos parece bien ofrecerle los planteles del Distrito Escolar N° 3 del Distrito Capital, para encuestar a los estudiantes de Básica, Media, Diversificada y Profesional (de 12 a 17 años), y entrevistar a maestros y otro personal que desempeña labores en dichos Planteles.

Además le facilitamos el contacto con los padres y representantes de los estudiantes con el fin de lograr el consentimiento apropiado para que sus representados participen en el estudio planteado.

De nuevo le expresamos nuestra complacencia por su preocupación por mejorar nuestra sociedad a través del estudio de consumo de drogas entre los jóvenes Venezolanos quedando en espera de un informe detallado de los resultados al finalizar el estudio.

Atentamente,

Thamara Villegas de Salvat
Jefa del Distrito Escolar N° 3
Directora (e)

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