ACCULTURATION AND LOCUS OF CONTROL:
THEIR RELATIONSHIP TO THE
USE OF INHALANTS

THESIS

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By

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This study analyzed the effects of acculturation, locus 
of control, and incidence of inhalant use on Mexican 
Americans. Information was collected from 275 subjects at 
three middle schools and one treatment center. The 
instrument consisted of Levenson's Locus of Control Scale, 
the Acculturation Rating Scale for Mexican Americans, and an 
incidence of use and family relationship questionnaire 
developed for this study.

Statistical analysis indicated a relationship between 
acculturation and inhalant use. Further examination 
revealed relationships between a family members' use and 
subjects' inhalant use; subjects' alcohol use and inhalant 
use; and subjects' marijuana use and inhalant use.

Information implied that prevention and intervention 
programs should focus on children of substance users and 
further research is needed surrounding the role of 
acculturation.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF TABLES</th>
<th>ii</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td>I. THE PROBLEM</td>
<td>1</td>
</tr>
<tr>
<td>Introduction</td>
<td></td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td></td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td></td>
</tr>
<tr>
<td>Significance of the Study</td>
<td></td>
</tr>
<tr>
<td>Hypotheses of the Study</td>
<td></td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td></td>
</tr>
<tr>
<td>Definition of the Terms</td>
<td></td>
</tr>
<tr>
<td>II. REVIEW OF LITERATURE</td>
<td>13</td>
</tr>
<tr>
<td>III. METHODOLOGY</td>
<td>39</td>
</tr>
<tr>
<td>Selection of the Subjects</td>
<td></td>
</tr>
<tr>
<td>Data Gathering</td>
<td></td>
</tr>
<tr>
<td>Description of the Instruments</td>
<td></td>
</tr>
<tr>
<td>Statistical Treatment of the Data</td>
<td></td>
</tr>
<tr>
<td>IV. RESULTS OF STUDY</td>
<td>45</td>
</tr>
<tr>
<td>V. CONCLUSIONS</td>
<td>55</td>
</tr>
<tr>
<td>APPENDICES</td>
<td>62</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>76</td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>1. Ethnicity of Subjects</td>
<td>46</td>
</tr>
<tr>
<td>2. Current Grade Level of Subjects</td>
<td>46</td>
</tr>
<tr>
<td>3. Parent's Marital Status</td>
<td>47</td>
</tr>
<tr>
<td>4. Subject's Report of Alcohol, Marijuana,</td>
<td>48</td>
</tr>
<tr>
<td>or Inhalant Use Ever</td>
<td></td>
</tr>
<tr>
<td>5. Subject's Report of Alcohol, Marijuana,</td>
<td>49</td>
</tr>
<tr>
<td>or Inhalant Use in the Last Year</td>
<td></td>
</tr>
<tr>
<td>6. Subject's Report of Alcohol, Marijuana,</td>
<td>49</td>
</tr>
<tr>
<td>or Inhalant Use in the Last Month</td>
<td></td>
</tr>
<tr>
<td>7. Type of Inhalant Used by the Subjects</td>
<td>50</td>
</tr>
<tr>
<td>8. Locus of Control and Acculturation Scores</td>
<td>51</td>
</tr>
<tr>
<td>9. Hispanic Inhalant Use in the Last Year</td>
<td>53</td>
</tr>
<tr>
<td>in Relationship to Locus of Control and</td>
<td></td>
</tr>
<tr>
<td>Acculturation Scores</td>
<td></td>
</tr>
<tr>
<td>10. Hispanic Inhalant Use in the Last Month,</td>
<td>53</td>
</tr>
<tr>
<td>in Relationship to Locus of Control and</td>
<td></td>
</tr>
<tr>
<td>Acculturation Scores</td>
<td></td>
</tr>
<tr>
<td>11. Hispanic Inhalant Use (Ever) in Relationship</td>
<td>54</td>
</tr>
<tr>
<td>to Locus of Control and Acculturation Scores</td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER I
THE PROBLEM

Introduction

Substance abuse among adolescents has become a serious problem in the United States. Although marijuana and alcohol use appear to be declining, the use of inhalants for the purpose of intoxication is holding steady and possibly increasing, (NIDA, 1975-1983; The Governor's Task Force on Inhalant Abuse, 1984; Texas Commission on Alcohol and Drug Abuse, 1988). In the United States it is clearly recognized that marijuana and alcohol use is a serious concern, but most people remain unaware of inhalant use as a problem primarily because it involves substances never meant to be consumed for any purpose (The Governor's Task Force, 1984). Inhalant use is understood to be the repeated, intentional inhalation of solvent vapors for the purpose of intoxication, and should be considered a national concern.

Although the inhalation of a variety of vapors has been a method of altering consciousness for centuries, inhalant use was first recognized as a serious problem in the United States in the 1950's when it was reported that two boys were addicted to gasoline sniffing (Clinger & Johnson, 1951;
Smith, 1976). Other scattered reports by Faucett and Jensen (1952), and Oldham (1961) consisted of case studies by physicians and psychiatrists who were treating adolescents for emotional problems (Mason, 1979).

During the 1960's, inhalant use gained in popularity which spread alarm among adults (Barnes, 1979). At first, this special type of substance abuse was misconstrued to be a harmless, childish amusement and later regarded as a passing fad. In the early 1970's, however, inhalant use was recognized as a grave and persistent social problem (Attenkirch & Kindermann, 1986).

Beginning in the 1970's and 1980's, researchers started to examine the problem of inhalant use seriously. Early reports were not designed as social or behavioral studies, but when combined, they provided a composite profile of the "typical" inhalant user (Mason, 1979). This profile indicated that there were two types of inhalant users: occasional users who may or may not move on to other drugs, and chronic users whose drug of choice is inhalants. The profile of the occasional inhalant user is no different from that of other drug users. Chronic inhalant use, however, appears to affect individuals who are frequently young males, 7 to 17 years of age, and from underprivileged minority communities (Medida & Cruz, 1972; Cohen, 1973). Other studies revealed that personal, familial, and social disorganization was prevalent in the life of the chronic
inhalant user (Massengale et al., 1963; Brozovsky & Winkler, 1965). Unfortunately, youths from the Mexican American community are overrepresented among users of inhalants (Ellison, 1964; Oliver & Watson, 1977; Barnes, 1979; The Governor's Task Force, 1984).

Noting the overrepresentation of Mexican American's among inhalant users, it has been posited that social disorganization among this population of users may result from the clash of traditional Mexican culture with the demands of mainstream Anglo society (Bonnheim & Korman, 1985). In other words, acculturation, which refers to the psychosocial changes that occur when individuals originating from one culture immigrate to a new host culture, may be related to the incidence of inhalant use (Burnam et al., 1987). Schreiber and Homiak (1981) also claim that most researchers have hypothesized that Mexican Americans have a need for mental health services because of pressures they presumably experience from acculturational stress. In addition, Wallace (1969) notes that those people most stressed by acculturation tend to engage in maladaptive behaviors, including drug abuse.

Personal disorganization as it relates to the inhalant user, however, remains an unclear concept. Mexican American individuals may feel anxiety resulting from the interaction of the ethnic culture, environment, and internal feelings. They may perceive that their efforts to achieve status as a
minority group in a discriminatory Anglo environment are frustrated (Madsen, 1964; Graves, 1967). Completely frustrated in their attempts to achieve status, they may turn to other means for achieving control over the environment and their unpleasant internal feelings.

Locus of control refers to individuals' feelings about who or what controls their lives. This control, according to the locus of control concept, can come from inside the individual (internal), can occur by luck, or can be delegated by powerful others. A few studies that have examined the relationship between substance abuse and locus of control concluded that addicts tried to gain control over their anxieties, conflicts, and moods by using narcotics (Goss & Morosko, 1970; Berzins & Ross, 1973). Although some investigators generally found that substance abusers and alcoholics had a more internal locus of control than nonalcoholics, but others have found the opposite (Caster & Parsons, 1977). To date, there is no evidence that inhalant users do or do not employ the mechanism of locus of control to overcome their personal disorganization.

While inhalant use may not pose an immediate threat to the structure of society, the harm to individuals may be substantial (Padilla et al., 1979). Many need help, but effective treatment for inhalant users is not widely available (Ackerly & Gibson, 1964; The Governor's Task Force, 1984; Smart, 1986). Until problems related to
inhalant use are more thoroughly researched, treatment and prevention efforts will continue to suffer along with the inhalant user (The Governor's Task Force, 1984).

Statement of the Problem

Inhalant use has been recognized as a health problem since the 1950's, but decades later we continue to search for the reasons for inhalant use in certain populations, effective methods for preventing inhalant use, and adequate treatment models for the inhalant user. This study was designed to analyze and compare the effects of acculturation, locus of control, and incidence of inhalant use among a selected group of Mexican American adolescents.

Purpose of the Study

The purpose of the study was to determine the relationship between the variables of acculturation and locus of control as they relate to the incidence of inhalant use among Mexican American adolescents.

Significance of Study

Even though the number of inhalant users is low compared with the number using other drugs such as marijuana and alcohol, the number of inhalant users in some parts of the country is on a dramatic rise (Attenkirch & Kindermann, 1981; NIDA, 1986). Data also suggest that inhalant use is a serious problem among lower-class Mexican Americans, but there is little research that provides an understanding of the causes of this problem (Bachrach & Sandler, 1985).
Inhalant use has consistently shown an increase in numbers since the 1980's (The Governor's Task Force, 1984). In the state of Texas, 28% of the seventh graders surveyed had tried inhalants (Texas Commission on Alcohol and Drug Abuse, 1988). In El Paso, Texas, alone there are an estimated 30 thousand inhalant users (The Governor's Task Force, 1984). In Dallas, Texas, 28% of the Dallas Independent School District's subjects reported that they had at least experimented with inhalants (Hazelden Foundation, 1985). As the number of inhalant users grows, the need for inhalant use research also grows.

Prevalence literature on inhalant use indicates extreme variability by area and over time, but a higher level of use is often found among some minority groups, especially the Mexican American population (Reed & May, 1984). It is important to examine factors related to inhalant use especially with emphasis on the Mexican American because of several variables including growth in the Mexican American population, acculturation, and environmental control. The need for further research continues to increase due to the great growth on the Mexican American population in the United States. The non-white percentage of the total population in the United States increased from 17% in 1970 to 23.3% in 1980 (U.S. Bureau of the Census, 1980). By the year 2080, it is estimated that the Hispanic population in the United States will reach 99.6 million (Research and
Development, 1987). In the Dallas Independent School District alone there are over 40 thousand Hispanic students, with the majority of them from Mexican American descent (Dallas Independent School District, 1986).

With the nation becoming culturally pluralistic, particularly in the larger urban centers, it is important to examine the complex factors affecting the interface between the various cultures and the Anglo majority (de Anda, 1984). Although some studies have linked acculturation and inhalant use, more research is needed to understand the concept fully (Stybel et al., 1976; Caetano, 1987; Burnam et al., 1987). Furthermore, additional knowledge of the relationship between sociocultural factors and mental health, especially among the Mexican American population, may help to document the effects of immigration and acculturation on their mental health, and help to understand the social and psychological processes which mediate these effects.

With frustration arising from the pressures of a large, predominantly Anglo society, Mexican American individuals may feel inadequate in their environment. To understand them and their environment, researchers have used the locus of control concept. Very few studies have examined the relationship between locus of control and drug use (Berzins & Ross, 1973; Butts & Chotlos, 1973; Hall, 1978). In fact, there was no evidence located that attempted to show a relationship between inhalant use and locus of control. It
is important to determine whether or not there is a relationship.

Many problems arising from the use of inhalants may be stifled, especially in the Mexican American population if effective prevention methods and adequate treatment models are developed. The lack of research is a serious impediment which hampers our ability to conceptualize and develop these efforts (Bachrach & Sandler, 1985). Currently, prevention methods are poor due to misconceptions and the low level of use reported in the general population (Smart, 1986). Hence, major inhalant use prevention programs are not seen as needed in most communities (Smart, 1986). At the same time, many communities that do recognize that inhalant use problems exist tend to be isolated and disorganized, and tend to lack social supports (Schreiber & Homiak, 1981). Continued research could very well aid in the development of programs designed for inhalant using and non-inhalant using communities.

Treatment for inhalant users is also inadequate at this time (NIDA, 1978; The Governor's Task Force, 1984). Inhalant users currently must use treatment modalities that were designed for alcohol and other drugs (Mason, 1979). Rarely do treatment centers concentrate solely on inhalant use. Important aspects such as culture, environment, and personal motivation are sometimes ignored during treatment
(Barnes, 1979). With further research, treatment for inhalant users could become more specialized and successful.

Additional research in the field of inhalant use appears to be the key to assisting the inhalant user. Further research surrounding reasons for use, acculturation, and locus of control will not only add to the body of knowledge, it should also open new avenues for study, as well as provide a greater understanding of inhalant use. Lastly, with this greater understanding, prevention methods and treatment models could be improved and refined.

Hypotheses of the Study

The following hypotheses were used in this study and were considered significant at (p<0.05):

1. There is a significant difference between degrees of acculturation and incidence of inhalant use among test subjects.
2. There is a significant difference between locus of control and incidence of inhalant use among test subjects.
3. There is a significant interaction effect among degrees of acculturation, locus of control scores, and incidence of inhalant use (abstainers, experimental users, occasional users, chronic users) among test subjects.
Limitations of the Study

The study was circumscribed by the following limitations:

1. Due to the setting, subject matter, and illegality of inhalant use, responses may have been altered because of the perceived threat of retribution even though strict confidentiality has been assured.

2. The quality of self report may have been threatened by response errors from faulty memory.

3. The study was limited to those who voluntarily agreed to participate.

4. The test subjects were not randomly selected, therefore, the study cannot be generalized to the larger population.

5. The test subjects did not include individuals originating from Cuba, Puerto Rico, Spain, or Latin America, therefore limiting the study.

6. The test sample included subjects from one free treatment center. The exclusion of subjects from other treatment centers limits the scope of the study.

7. The majority of subjects were in the eighth grade, therefore, the study cannot be generalized to all middle school students.

8. The third section of the survey instrument was not pre-tested, thus limiting the study.
9. The study assumed that all subjects who responded as Hispanic were from Mexican descent.

**Definition of Terms**

1. **Acculturation**- The psychosocial changes that occur when individuals originating from one culture immigrate to a new host culture (Burnam et al., 1987).

2. **Inhalant**- Volatile substances that vaporize to a gaseous state at room temperature and when breathed in cause intoxication. They can be classified in four basic categories: anesthetics, solvents, aerosols, and nitrites. For further information and examination, please see Appendix A.

3. **Inhalant user**- An individual who draws in by breathing a variety of substances that include anesthetics, solvents, aerosols, and nitrites for the purpose of intoxication.

4. **Abstainer**- individuals who have never used inhalants.

5. **Experimental user**- individuals who have used inhalants, but have answered "never" or "rarely" to use in the past month and/or the past year.

6. **Occasional user**- individuals who have used inhalants, but have answered "sometimes" to use in the past month and/or past year.
7. **Chronic user** - individuals who have used inhalants, and have answered "often" or "daily" to use in the past month and/or past year.

8. **Mexican American** - individuals in the United States who identify themselves, or who identifies one or both of their parents as belonging to one of the following groups: Mexican, Mexican American, Hispanic, or Chicano. Hispanic and Mexican American will be used interchangeably since a large percentage of the Hispanics in Dallas are from Mexico.

9. **Locus of Control** - individuals' views on who or what controls their lives. In other words, the expectancy individuals harbor that the reinforcements received in their lives are dependent on the three following dimensions:
   a. **internal** - individuals' views of the degree in which they control their future through personal action (Caster & Parsons, 1977).
   b. **chance** - (external) individuals' views of the role that luck or chance plays in their lives (Caster & Parsons, 1977).
   c. **powerful others** - (external) individuals' views of the role of others in what happens to them (Caster & Parsons, 1977).
CHAPTER II

REVIEW OF LITERATURE

This chapter reviews the literature relevant to the study of inhalant use in the United States. It is divided into the following subheadings:

a. Historical review of inhalant use
b. Prevalence of use
   - among populations
   - among Mexican Americans
   - among Texas youth
   - among Dallas youth
c. Physiological effects of inhalant use
d. Psychological effects of inhalant use
e. Social effects of inhalant use
f. Role of acculturation
g. Role of locus of control
h. Current inhalant use prevention and treatment models

Historical Review of Inhalant Use

The voluntary inhalation of substances for the purpose of mood alteration is a practice that can be traced to the earliest civilized times (Novak, 1980). Smith (1976), Novak (1980), and Watson (1984) all noted that throughout history inhalation of a variety of vapors has been a popular method.
of altering consciousness among such groups as the ancient Greeks, Hebrews, and South American Indians.

Other substances in gaseous states were introduced in the 1800's. In the early 1800's, the first use of the anesthetics nitrous oxide, ether, and chloroform was as an intoxicant (NIDA, 1978). Sir Joseph Priestley, in 1776, synthesized nitrous oxide and from that time until 1799, Sir Humphrey Davey explored the recreational potential of the gas (Novak, 1980). Nagle (1968) reported that the recreational use of nitrous oxide was widespread among nineteenth century American medical students. In fact, Gardner Quincy Colton dropped out of medical school to market the gas as a social intoxicant (Novak, 1980).

In 1799, Sir Humphrey Davey discovered that nitrous oxide could subdue pain (Novak, 1980). From that point forward medical applications in the fields of dentistry and surgery followed (NIDA, 1978). The recreational use of ether, nitrous oxide, and chloroform did not stop because medical uses were discovered. Jaffe (1965), Nagle (1968), and Chenoweth (1977) have reported that ether was used in Ireland and the United States as a substitute for alcohol. Occasional resurgence of the use of anesthetics for recreational purposes have occurred since its demise in the late 1800's, but the problem now seems to be limited to those having ready access to the substances (Barnes, 1979).
Epidemiological interest in inhalant use did not begin until the 1960's, although some isolated cases were reported in the 1940's and 1950's (Smart, 1986). Prior to the 1960's, the use of inhalants for intoxication was thought to have been restricted to factory workers who had been exposed to fumes during the course of their work (Barnes, 1979). In 1951, Clinger and Johnson provided a case study of two sixteen-year-old boys who were admitted to the state hospital in 1946 for "addiction to the habit of inhaling gasoline fumes". Faucett and Jensen (1952) followed with a report on an eleven-year-old boy who was treated in 1948 for the "habituation to the inhalation of gasoline fumes". Also in the 1950's, Nitsche and Robinson (1959) reported on a twelve-year-old boy who was "addicted to gasoline".

During the 1960's, more reports on "inhalant addiction" began to appear. In 1961, Lawton and Malmquist reported on three cases of gasoline addiction and in 1962, Easson also reported on two boys addicted to gasoline.

While the interest in inhaling gasoline continued to grow, a new form of inhalant use began to gain popularity and evoke social concern. In 1963, many studies began to appear on the phenomenon of "glue sniffing".

Press (1963), Barker and Adams (1963), and Massengale et al. (1963) all reported that the practice of glue sniffing was becoming alarmingly widespread and should not be overlooked. Barker and Adams (1963), in particular, soon
began to take a closer look at these individuals and proceeded to put together a composite picture of a "sniffer". Many of the early reports on inhalant users were case studies generally not intended for social or behavioral science investigation. This profile of the inhalant user was best exemplified by the following statement:

Inhalant users are generally delinquent, early adolescent, ethnic minority boys, especially those who are poor achievers in an academic setting. These boys come from broken homes located in high delinquency urban areas. The homes have an average of seven to eight siblings who experience limited control from their parents, who use alcohol to excess. Family disintegration, characterized by the lack of male involvement was the general picture (Barker and Adams, 1963).

Ellison (1964), Ackerly and Gibson (1964), Glaser (1966), Durden and Chipman (1967), and Press and Done (1967) found similar characteristics among most inhalant users.

The use of aerosols as a means of intoxication also began peaking in the 1960's (Novak, 1980). This form of inhalant use spread from the West Coast to the East Coast (Christ, 1980). By the end of the decade, the inhalation of gasoline, glue, aerosols, and other volatile solvents was widespread enough to provoke over 200 articles, case
reports, and reviews in the medical literature (Novak, 1980).

The use of inhalants continued to dramatically increase during the 1970's among most age groups (Nicholi, 1983). Even though the use of inhalants increased, the population as a whole continued to dismiss inhalant use as a passing fad (Werner, 1979).

The inhalant use trend has continued into the 1980's and continues to be a cause of serious public concern not only in the United States, but worldwide (Nicholi, 1983). Other countries such as Mexico, Canada, Japan, England, Sweden, Norway, Germany, and Australia share this concern (Nurcombe, 1970; and Nicholi, 1983). Cases in South Africa and South America have also been reported (Watson, 1984).

Prevalence of Inhalant Use

It is difficult to assess the true number of inhalant users since the users are identified only when they are brought to the attention of the authorities after they have participated in some sort of antisocial behavior, thus resulting in an overrepresentation of a restricted population (Werner, 1979). Wording of national surveys is often inconsistent, also resulting in a misrepresentation of true inhalant users (Werner, 1979). Additionally, most studies are done on a student population, whereas a large proportion of the chronic inhalant users will not be found in an academic setting (Werner, 1979). Available statistics,
therefore, are marked by a variety of methodological problems and probably underestimate the actual incidence of inhalant use (Young & Lawson, 1981).

Reports of current inhalant use vary somewhat from study to study (Smart, 1976). National surveys have estimated that 12% of the nation's high school seniors have tried inhalants (Johnston et al., 1980). Fishburn et al. (1980) reported that 9.8% of youth (12-17 years old) have used inhalants. Lifetime prevalence rates for the classes of 1979, 1980, 1981 were 18.1%, 17.6%, and 17.4%, respectively (U.S. Department of Health and Human Services, 1981).

More recently, 19% of all United States high school seniors in 1983 and 1984 reported using inhalants (NIDA, 1986). The total number of individuals reporting that they have "ever used" inhalants was close to thirteen million. In a 1987 survey done by the University of Michigan, 19% of the high school seniors in the United States again reported using inhalants (NIDA, 1988).

Inhalant use is recognized predominantly as an adolescent problem. Most studies show inhalants to be intoxicants of the young, with most users starting between the ages of ten and fifteen (Natera, 1978; Medina Mora et al., 1978; Barnes, 1979; Cohen, 1979; Novak, 1980). However, a few studies have included adults (Smart, 1986). The data appears to be conservative in terms of prevalence
of use among adults (Young & Lawson, 1981), although in one study adult use did increase slightly from 1972 to 1977 (Werner, 1979). Wallace (1974) reported that 2% of all adults had tried inhalants, but Cohen (1977) has speculated that there is a greater number of inhalant users in this older age group. Other studies have reported that there are only between 2% and 4% of adults that have used inhalants (New York State Division of Substance Abuse Services, 1981; Smart, 1986).

Prevalence literature on adolescent inhalant use are readily available and indicate extreme variability by area and over time, but a higher level of use is often found among some minority groups. (Reed & May, 1984). The prevalence of use can range from 1% to 60% of the studied population (Barnes, 1979). Many studies have found a high level of inhalant use among Mexican American and other groups of Hispanic origin living in the United States. In fact, as early as the 1960's, the vast majority of the reported inhalant users were Hispanic boys (Barker & Adams, 1963). National studies have estimated that 8% to 11% of all youths have tried inhalants, while 13% to 22% of all Hispanic children have used them (Cohen, 1979; Richards, 1980). Other researchers have also found that in terms of race, Hispanics are overrepresented among inhalant users (Medida & Cruz, 1972; Stybel et al., 1976; Korman et al., 1977; Oetting et al., 1980). Sokol and Robinson (1963) and
Cohen (1979) also reported that Mexican Americans were more frequently involved with inhalants than other groups. From 1974 through 1980, Hispanics represented 85.2% of all inhalant cases recorded by the New Mexico drug abuse programs, even though Hispanics are slightly less than 40% of the state's population (Reed, 1981). Additionally, Mexican American adolescents in East Los Angeles were found to be fourteen times more likely to be using inhalants when contrasted with a national survey (Padilla, 1977).

Many of the reports on inhalant use have been obtained from large urban areas. Texas cities, because of their large Mexican American populations and inhalant use problems, have been sites of several studies. A San Antonio survey of adolescents documented an alarming 36% prevalence of inhalant use (The Governor's Task Force, 1984). It is estimated that there are over thirty thousand inhalant users in El Paso alone, with well over eighty-five thousand in the state of Texas (The Governor's Task Force, 1984). These numbers are believed to be very conservative since it has been reported that for every inhalant user identified, there are four or five that remain unidentified (The Governor's Task Force, 1984).

Dallas is a city that has been plagued by inhalant use. In 1973, for example, the Dallas Independent School District conducted a systemwide drug usage survey. The number of students who had used inhalants was as high as 23.2% in the
ninth grade (Department of Research and Evaluation, 1973). In another Dallas study, the researchers reported that even though the Mexican American population in the study was only 15.7%, they constituted over 21% of the total inhalant using group (Stybel et al., 1976). In a more recent survey by the Hazelden Foundation (1985), 28% of the students in the Dallas Independent School District had tried inhalants. There are currently forty thousand Hispanic students in the district, thus making the inhalant use problem very real to the Dallas area.

**Physiological Effects**

The study of inhalant use encompasses a wide variety of substances that contains a wide spectrum of chemicals, therefore, the use of inhalants produces numerous adverse physical effects (Reed & May, 1984). Several studies have indicated that chronic inhalant users are the most susceptible to adverse physiological effects that range from acute poisoning to death (Press & Done, 1967; King et al., 1985; Levy, 1986; Balster, 1987).

The most benign physiological effect would most likely be an inhalant "hangover", typically featuring a headache and pain in the extremities (Cohen, 1977). Other residual effects include menstrual disorders, frequent coughs, night sweats, shortness of breath, indigestion, constipation, tiredness, and diarrhea (Comstock & Comstock, 1977; Neff, 1984).
It appears that chronic users develop more severe problems than the occasional or experimental user. Cases of hepatic damage, acute renal failure, and upper respiratory complications occur in the chronic user (Watson, 1984). Dangers including liver and kidney damage were also reported by Wyse (1973). Central nervous system damage resulting from the chronic use of inhalants has been reported by Balster (1987) and Westermeyer (1987).

The most serious physiological effect is the "sudden sniffing death syndrome". This syndrome pertains to the large numbers of sudden and unexpected deaths resulting from the inhalation of a variety of substances (Nicholi, 1983). Bass (1970) reported that in the 1960's, at least 110 deaths were attributed to "sudden sniffing death". Death, in most cases, was due to cardiac arrest and a variety of cardiac arrhythmias (Bass, 1970; Taylor & Harris, 1970). In addition, Barr and Jones (1978) compiled accounts of over 300 deaths resulting from the intentional consumption of inhalants.

In Dallas County, from 1971 to 1977, there were three deaths directly related to the use of inhalants (Garriot & Petty, 1980). The Governor's Task Force on Inhalant Abuse (1984) reported eighteen deaths from 1982 to 1984 in the Bexar County medical examiners office alone. Of these deaths, seventeen were of Hispanic origin.
In addition to sudden sniffing deaths, suffocation is another common cause of death during inhalant use (Cohen, 1977; Young & Lawson, 1981). This situation occurs when the user loses consciousness and falls upon the bag or rag containing the material being inhaled.

**Psychological Effects**

Death is certainly the most severe physiological effect on the inhalant user, but living the life of the user may, at times, seem worse than death. According to Fejer and Smart (1973), inhalant users reported having been treated for psychological problems more often than non-users.

Inhalant users appeared to be individuals under the pressures of many stresses, both psychological and environmental, according to several researchers (Matthews & Korman, 1981; Mitic et al., 1987). As early as the 1950's, researchers were examining the adverse psychological effects of inhalant use. Investigators have found that the use of inhalants can cause problems ranging from slight irritability to psychosis or schizophrenia, depending on the individual (Clinger and Johnson, 1951; Glaser, 1966; Korman et al., 1980; Westermeyer, 1987).

Emotional dyscontrol is probably the most common psychological effect. Some researchers referred to a disinhibition leading to affective outbursts, while others described a deepening depressive state (Korman et al., 1980). Press and Done (1967) noted a more chronic pattern
of worries, inadequacy, insecurity, and passive-aggressive attitudes. Apparently, inhalant users, according to Young and Lawson (1981), were often troubled by poor self-esteem and feelings of powerlessness compounded by the use of inhalants.

Other psychological effects included delusions and hallucinations. Visual and less common auditory hallucinations occur, but apparently only in susceptible individuals (Novak, 1980). These persons have reported floating sensations, distortions of shapes, and altered colors (Lawton & Malmquist, 1961; Tolan & Lingl, 1964; Levy, 1986). In fact, hallucinations have been reported in 44% of chronic users (Shuse & Burrell, 1982). These hallucinations appeared during the "high", but disappeared when the high was gone (Wyse, 1973).

Hallucinations, in some cases, continue long after the inhalant high was gone. Paranoid delusion and hallucinations were the most characteristically reported manifestations of inhalant psychosis (Glaser, 1966). Other studies have reported that inhalant users exhibited severe psychopathology, including schizophrenia (Korman et al., 1980). The percentage of schizophrenic inhalant users varied from 10% to 75%, depending on the study (Brozovsky & Winkler, 1965; Alapin, 1972; Comstock & Comstock, 1977).

It must be emphasized that not all persons who used inhalants developed these types of symptomologies and that
chronic users were more likely to develop complications than the occasional or experimental user (Glaser, 1966). Of even greater interest was the issue of prognosis, which unfortunately for the inhalant user was poorer than for other drug users (Comstock & Comstock, 1977; Korman et al., 1980).

Social Effects

Many times before society sees the psychological effects of inhalant use, they see the social effects, which are usually manifested in antisocial behavior. Cohen (1973) referred to a basic loss of ability to monitor one's thinking and an impairment in judgement which gives rise to a loss of behavioral control. Inhalant users frequently come in contact with authorities because of their involvement in some form of antisocial behavior ranging from acting out in school and at home to attempted murder and rape. Massengale et al. (1963) reported a direct relation between inhalant use and delinquency.

Many inhalant users experience failure in school (Ellison, 1964). According to Press and Done (1967), the inhalant users in their study, who were generally low achievers, experienced no success in the classroom and seemed to use the inhalants as means of relieving anxiety. Unfortunately for the inhalant user, the use of inhalants eventually prohibited him from attending class at all in the future.
In the home, inhalant users also displayed antisocial behaviors. Many families with an inhalant using child frequently reported having difficulty relating and communicating (Bonnheim & Korman, 1985). The lack of communication certainly was a problem that led to anger and aggression expressed primarily toward the inhalant users' elders in the home (Gilbert, 1983).

Outside the home and school the inhalant user continued to display a flagrant disregard for social rules. Vandalism, burglary, and assault were common offenses committed by the inhalant user due to behavioral dyscontrol (Stybel et al., 1976; Watson, 1984). Cohen (1973) pointed out that inhalants, like alcohol, may extinguish control over behavior before they extinguish control over motor activity. The most serious cases of aggressive behaviors have been instances of attempted murder and rape (Done, 1973; Watson, 1984).

Role of Acculturation

Noting the overrepresentation of Mexican American youth as inhalant users, it has been posited that social disorganization among these users may result from a clash of traditional Mexican culture with the demands of mainstream Anglo society (Bonnheim & Korman, 1985). Several studies have examined the link between inhalant use and acculturation (Bonnheim, 1978; Gilbert, 1983; Bonnheim & Korman, 1985).
According to Gilbert (1983), it seemed that the inhalant user was caught between two cultures. The process of acculturation was often associated with stress resulting from identity crises and the loss of traditional institutions that were a source of meaning and comfort to the particular acculturating group (Bonnheim & Korman, 1985). Acculturative stress was postulated as being a type of psychological distress or discomfort that would be present in groups undergoing social and cultural change (Berry & Annis, 1974). Those most stressed by acculturation have been found to engage in maladaptive behaviors, including drug abuse (Wallace, 1969).

The strain on acculturating adolescents served to break down traditional family life that had previously served to inhibit deviant behaviors (Graves, 1967; Fabrega, 1969). This breakdown seemed to add additional stress to the family. Thus the school-aged child, already stressed due to conflicts and role confusion, lost the ability to control the expression of stress due to acculturation, Bonnheim and Korman (1985). With the added stress, the reaction to such conflict possibly resulted in inhalant use (Bonnheim & Korman, 1985).

In other studies, higher acculturation was associated with drug abuse, alcohol abuse, and drug dependence (Burnam et al., 1987; Caetano, 1987). The increased risk of drug abuse by Mexican American immigrants associated with higher
levels of acculturation may have been due to the increased access or to contact with reference groups in which drugs are used for recreational purposes (Burnam et al., 1987). These results were similar to those reported by Caetano (1987) regarding the use of alcohol and increased opportunities for higher acculturating Mexican Americans. It is important to note that neither study (Burnam et al., 1987; Caetano, 1987) mentioned the use of inhalants.

While there have been several investigations on the relationship between the use of inhalants and acculturation, there have been as many conclusions about the variables examined. Bonnheim and Korman (1985) reported that the key issue may not be acculturation alone, but an interaction of several variables. Burnam et al. (1987) also pointed out that there were discrepancies in the reports resulting in the need for closer examination. Finally, Bonnheim and Korman (1985) reported that acculturation does, in fact, play a role in inhalant use, but the role at this time is unclear.

Role of Locus of Control

There have been several studies examining locus of control and its relationship to drug and alcohol use. Two different scales were generally used in these studies. One scale, Rotter's Locus of Control Scale, was bi-dimensional and looked at locus of control from an internal and external control orientation (Goss & Morosko, 1970). The other
scale, Levenson's Locus of Control Scale, used three dimensions which were internal, chance, and powerful others (Levenson, 1973).

Several studies using Rotter's Scale specifically examined control orientation in relation to alcoholic and nonalcoholic populations. In these studies individuals who were internally oriented believed that they possessed the power to control what happened to themselves (Rotter, 1954). On the other hand, those individuals who believed that their lives were controlled by luck, chance, fate, or powers beyond their control were characterized as externally oriented (Rotter, 1954).

Goss and Morosko (1970) reported that alcoholics were internal in control orientation. Gozali and Sloan (1971) agreed with the findings and further suggested that an alcoholics internality was at least partly responsible for excessive drinking and proclivity to become an addict.

The findings by Goss and Morosko (1970) and Gozali and Sloan (1971) were challenged by Butts and Chotlos (1973), whose claim was that the comparison groups used in the two previous studies were not similar to the control groups. Butts and Chotlos (1973) reported that the alcoholics in their study were more externally oriented than the nonalcoholics.

In two studies involving Rotter's Scale and drug addicts the results were contradictory. Berzins and Ross
(1973) reported that opiate addicts displayed strong internal orientation. Hall (1978) found in his study that drug users did not necessarily have an internal control orientation.

There were several reasons given for the discrepancies in the reports on locus of control. In several studies, Blacks, American Indians, and others that come from lower-class or socioeconomically deprived areas scored higher in the external direction (Goss & Morosko, 1970). Younger individuals scored more in the external direction than did older persons (Butts & Chotlos, 1973). Finally, scores on the locus of control scale changed as exposure to treatment progressed (Oziel & Obitz, 1975).

Both Rotter's Scale and Social Learning Theory provided an excellent format for the investigation of control among addicts and alcoholics, but it did so with limitations (Hinrichson, 1976). The purpose of Hanna Levenson's research was to use a modification of Rotter's Scale in order to measure expectancies of control more accurately. Three new scales (internal, chance, and powerful others) were constructed to refine the idea of internal versus external control (Levenson, 1981). The rationale behind this differentiation stemmed from the reasoning that the people who believed that the world is unordered (chance) would behave and think differently from those who believed the world is unordered, but that powerful others were in
control (Levenson, 1973). Therefore, it appeared that there is some validity for separating Rotter's external dimension (Levenson, 1973).

Few studies have examined the relationship between Levenson's Scale and drug or alcohol use. In fact, the studies that there were on locus of control typically focused on alcoholics and their treatment. Caster and Parsons (1977) reported that alcoholics as a group scored higher on chance control than the control group. The group of alcoholics did not differ from the control group in regard to internal control and powerful others (Caster & Parsons, 1977). A second study by Caster and Parsons (1977) did not reveal any significant findings regarding Levenson's Scale and its relationship to alcoholism. This study examined treatment outcome, but did not compare alcoholics to nonalcoholics. Of all the literature reviewed, there were no references to locus of control (Rotter's or Levenson's) as related to inhalant use.

Prevention and Treatment

Currently, inhalant use prevention methods and treatment models are poor due to misconceptions about inhalant use and to the low level of use by the general population (Smart, 1986). Inhalant use is obviously a complex, multivariate problem, but the evidence suggests that not enough is being done about this problem.
Prevention programs for inhalant use are very scarce. Apparently, the Federal Government and most state governments have made little or no effort to fund inhalant use prevention programs, and those that do exist do not have the resources to document their effectiveness (The Governor's Task Force, 1984). Numerous prevention programs have been attempted, but none have concentrated solely on inhalant use (Smart, 1986). In fact, many states, including Texas, do not have official drug abuse prevention programs that are sanctioned by the state (The Governor's Task Force, 1984).

Legal controls on the use or possession of inhalants as a means of prevention are of questionable value in preventing inhalant use (Smart, 1986). Only seven states in the United States have laws addressing the problem of inhalant use (The Governor's Task Force, 1984). Unfortunately, these laws are seldom enforced, consequently, the impact is very limited (Smart, 1986).

Successful prevention methods have concentrated on recreational or prosocial activities, unfortunately inhalant users generally lived in an urban area where facilities were not available (NIDA, 1978). Efforts should be targeted in the communities in need of these prevention programs, but the communities tended to be isolated and disorganized, and lacked social supports (Schreiber & Homiak, 1981; Smart, 1986).
The Governor’s Task Force (1984) also pointed out that the successful programs began with the formation of parent groups and other community organizations as a protest against the harm to their children. This idea may be good for some communities, but would not work in others because inhalants were used by the adults as well as the children, and is not thought to be a problem (Barnes, 1979).

Other recommendations were made by Bachrach and Sandler (1985). In their study they found that prevention programs needed to consider finding that intimate support system of these youth due to the positive influence that peers can have over others. Problems arose with this suggestion when examination of other studies displayed that in many cases inhalant use was accepted within the culture of youth peer groups, thus it was not considered deviant behavior (NIDA, 1978; and Barnes, 1979). Inhalant use prevention programs should recognize the differences between occasional and chronic users and deal with each one accordingly (NIDA, 1978).

Inhalant use is a high stigma problem that needs to be "de-stigmatized" before any further progress can be made (The Governor's Task Force, 1984). This seemed to be true for middle class communities that often prefer to keep their blindfolds on rather than to confront the unpleasant truths involved in inhalant use by children and teenagers (The Governor's Task Force, 1984). Since inhalant use is often
closely related to "ghetto poverty", prevention may have to depend on a drastic change in attitudes as well as drastic socioeconomic changes (Smart, 1986).

Changes are also needed in the treatment of inhalant users. Currently, inhalant users are expected to use existing services that are provided to alcohol and drug users (The Governor's Task Force, 1984). A majority of treatment centers refused to treat the inhalant user, either on an inpatient or outpatient basis (Mason, 1979). In most instances, differences between providers and clients in terms of social class, culture, and language have made services uncongenial to Mexican Americans (Schreiber & Homiak, 1981). Even if there were good treatment centers for the inhalant user, Glaser (1966) and Sharp (1977) asserted that inhalant users rarely present themselves for treatment. Inhalant use by Mexican Americans has made their care and treatment a challenge (Rouse, 1987).

This challenge continues as therapists look for methods for treating the inhalant user. There are multiple patterns of inhalant use that require different treatment interventions, according to Lawson (1984). The success of treatment may very well depend on the resourcefulness of the therapist (Barnes, 1979).

Unsuccessful methods such as occupational and group therapy have been attempted (Neal & Thomas, 1974). Guinn (1979) found that drug using Mexican Americans had
difficulty expressing their feelings, thus making therapy difficult. Additionally, Ackerly and Gibson (1964) found that foster homes and training schools as models of treatment were also unsuccessful.

Although most treatment models for inhalant users have been unsuccessful, there have been some that have had a fair amount of success, but of course, they are not without problems. Rubin and Babbs (1970) tried a variety of treatment methods and found that the best model involved a special teacher, a probation officer, positive peer groups, and heavy family involvement. About half the inhalant users stopped using, only after a lengthy and costly approach. This approach would be acceptable if the inhalant using communities, that are generally socioeconomically deprived, had funds available to them.

Recreation and alternative programs have been somewhat successful with the inhalant using population, but the lack of funds and resources in the targeted communities prevented these models from existing to any great degree (NIDA, 1978).

Another somewhat successful model of treatment centered around the enhancement of personal and ethnic self-identity (Westermeyer, 1987). Further research is needed on this method.

The data has suggested that adequate treatment models with long term care and monitoring should be made available to the inhalant user (Westermeyer, 1987). All treatment
programs must realize that there are different types of inhalant users, therefore a variety of approaches may be needed. These approaches can be costly, consequently, government funding is needed to make these approaches more meaningful and successful.

The successful treatment of inhalant users should also contribute to prevention methods because inhalant use often occurs in groups, and treatment of these users could reduce the chances of young people modeling themselves on more experienced users (Smart, 1986). The combination of treatment and prevention should be able to limit the spread of inhalant use.

Summary

Inhalant use is a practice that has been in existence for centuries and recognized as a problem in the United States since as early as the 1950's (Mason, 1979). In the 1950's several inhalant users were treated and then examined in case studies. In 1963, Barker and Adams began to take a closer look at the inhalant user and were able to put together a composite profile.

A review of inhalant research during the 1960's indicated that as the use of inhalants grew, so did the interest in investigating this phenomenon (Novak, 1980). The use of inhalants continued to increase into the 1970's and 1980's, but many still continue to dismiss it as a passing fad (Werner, 1979; Nicholi, 1983).
It is difficult to assess the true number of inhalant
users in the United States because so many go unidentified
(Werner, 1979). A 1986 survey reported that over twelve
million individuals have used inhalants (NIDA, 1986).
Adolescents outnumbered adults in the research, and
Hispanics were overrepresented in the literature (Cohen,
1979).

In Texas there were an estimated eighty-five thousand
Additionally, one study reported that 28% of the eighth
graders in the Dallas Independent School District claimed to
have used inhalants (Hazelden, 1986).

There were many adverse effects of inhalant use,
especially chronic use. Physiological effects ranged from
acute poisoning to death (Balster, 1987). Psychological
effects ranged from slight irritability to schizophrenia,
while social effects ranged from acting out to attempted
murder and rape (Watson, 1984). Social effects were usually
manifested in antisocial behavior such as inappropriate
expression of anger, aggression, vandalism, burglary,
assault, and a flagrant disregard for social rules (Stybel
et al., 1976; and Watson, 1984).

Acculturation appeared to play a role in the use of
inhalants. It seemed that the inhalant users may feel
acculturative stress that could lead to the use of inhalants
and other drugs (Bonnheim & Korman, 1985). Although
acculturation seemed to be a factor in the use of inhalants, the role remained unclear and in need of further investigation.

Locus of control was another factor that researchers have examined in relation to drug use. The concept has been used in relation to drug and alcohol use, but has not been studied in relation to inhalant use.

There appeared to be many unclear variables surrounding inhalant use. This lack of information and unclear concepts, unfortunately, has lead to inadequate prevention methods and treatment models (Smart, 1986). A few methods have proved successful, but have been too costly to continue in areas that do not have available funds or resources (NIDA, 1978).

Finally, it seems that inhalant users, their treatment, and prevention programs will suffer until there is more research and understanding about inhalant use and the variables surrounding it.
CHAPTER III

METHODOLOGY

This study analyzed and compared the effects of acculturation and locus of control, and incidence of inhalant use by a selected group of Mexican American adolescents.

Selection of Subjects

The sample for this investigation was comprised of Mexican American adolescents from the Dallas area. The subjects were drawn from two distinct groups: a group from three middle schools and a group from a drug and alcohol treatment center. The first group came from the middle schools of Dallas Independent School District. These middle schools were chosen because they had the largest percentage of Hispanic students according to a 1985 school district census. The middle school-aged students were selected because the research states that a large number of individuals begin to use inhalants in their early "teen" years (Medida & Cruz, 1972; The Governor's Task Force, 1984; The Texas Commission on Alcohol and Drug Abuse, 1988).

The second group came from a treatment center in Dallas located in the primarily Hispanic populated area of the city. The center primarily treats an Hispanic population.
By examining this group they may offer some insight to helping others.

Data Gathering

I administered a survey (Appendix B) consisting of Levenson's Locus of Control Scale, the Acculturation Rating Scale for Mexican Americans, an incidence of use questionnaire, and several family related questions to all subjects. The first group of subjects completed the survey in the classroom of their respective middle schools. Permission to conduct the survey was gained from the principal at each campus. The second group of subjects completed the instrument in the "group" room of the treatment facility. A cover letter provided necessary instructions, a confidentiality statement, and insured anonymity. Participation in the study was completely voluntary. Even though the subjects were from a variety of ethnic backgrounds, only information from those of Mexican origin was used in this study. The subjects took approximately thirty minutes to complete the survey.

Description of the Instruments

Levenson's Locus of Control Scale, a moderate reconceptualization of Rotter's I-E Scale is composed of items from that scale and a set of statements to tap beliefs about personal control (Internal Scale), powerful others (Powerful Others Scale), and chance or fate (Chance Scale) (Levenson, 1981). There are eight items on each of the
three scales, which are presented to the subjects as one unified scale of 24 items. The specific content areas mentioned in the items are counterbalanced so as to appear equally often for all three dimensions (Levenson, 1981). The Internal Scale is represented by items 1, 4, 5, 9, 18, 19, 21, and 23. The Powerful Others Scale consists of items 3, 8, 11, 13, 15, 17, 20, and 22. Finally, the Chance Scale is represented by items 2, 6, 7, 10, 12, 14, 16, and 24. To score the scales, subjects responses to each item from strongly disagree (-3) to strongly agree (+3), are totalled and a constant of 24 is added to the total to eliminate negative values. The range on each scale is from 0-48.

For a student sample Kuder-Richardson reliabilities yielded .64 for the I Scales, .77 for the P Scale, and .78 for the C Scale. Since the items sample from a variety of situations, the internal consistency estimates are only moderately high (Levenson, 1981). In various studies, the P and C Scales usually correlate significantly with each other and are unrelated to the I Scale. As expected, items scored in the external direction are only minimally correlated with items scored in the internal direction. The P and C Scales are related in most samples since both orientations reflect a belief in a source of control external to self (Levenson, 1981).
The Acculturation Rating Scale for Mexican Americans (ARSMA) consists of 20 questions to be scored on a 5-point Likert scale. The questions were partially derived from a larger (126-item) questionnaire. Questions were originally selected on the basis of six dimensions noted by Padilla and Carlos (1974). These dimensions are as follows: language familiarity and usage, ethnic interaction, ethnic pride and identity, cultural heritage, generational proximity, and ethnic distance and perceived discrimination. However, after various item analyses, questions that attempted to tap ethnic distance and perceived discrimination were excluded from the scale by Cuellar, Harris, and Jasso (1980). The total score is the sum of all 20 multiple-choice items that were circled. The average score is the total score divided by 20 and is equal to the subjects acculturation rating score (ranging from "very Mexican" to "very Anglicized").

Internal reliability was measured by using a coefficient alpha. A coefficient alpha of .88 was obtained for normal (unhospitalized) subjects and an alpha of .81 was obtained for the hospitalized sample (Cuellar, Harris, and Jasso, 1980). As a means of assessing whether the ARSMA indeed measures differences in the predicted direction between Mexican, Mexican Americans, and Anglos, these three groups were analyzed separately. The group from Mexico obtained a mean of 1.67, the Mexican American group obtained
a mean of 2.88, and the Anglo group obtained a mean of 4.39, significant at $p<0.01$ (Cuellar, Harris, and Jasso, 1980).

The third section of the survey is an incidence of use questionnaire developed for this study. The questionnaire will attempt to categorize the subjects in four groups ranging from abstainers to chronic inhalant users. The questionnaire will examine incidence of use in the past month, the past year, and ever.

The final section contains six questions about family relationships. These questions were developed for this study.

**Statistical Treatment of the Data**

A Pearson product-moment correlation was used to examine the relationships between each of the scales of the survey:

1. Level of acculturation and locus of control.
2. Level of acculturation and incidence of use.
3. Locus of control and incidence of use.

In addition to the Pearson correlations, 2x2 contingency tables were constructed by collapsing variables into dichotomous categories. Each contingency table produced a chi-square coefficient which, in turn, was used to specifically examine variables listed on the tables.

The level of acculturation scores were placed in five categories as follows: Type 1, very Mexican; Type 2, Mexican-oriented bicultural; Type 3, "true" bicultural; Type
4, Anglo-Oriented bicultural; and Type 5, very Anglicized. The incidence of inhalant use reports were also distributed in categories as follows: Abstainer, Experimental User, Occasional User, and Chronic User. The Locus of Control scale was separated into three sections: Internal, Powerful Others, and Chance, and was scored accordingly.

Each of the statistical procedures was carried out by the Statistical Package for the Social Sciences (SPSS) computer program. The program included descriptive statistics, correlations, ANOVA, and summary statistics in addition to the tables previously noted. It also provided specific frequency distributions for individual items and concepts within each construct.
CHAPTER IV

RESULTS OF STUDY

The following chapter displays the results of the survey. Demographic information will be followed by statistical information relating to the hypotheses.

Demographic Information

There were a total of 298 students from three middle schools and one treatment center who participated in the study. There were no students at any of the sites who refused to cooperate. Twenty-three surveys (22 from the middle schools and 1 from the treatment center) were not used in the results of the study due to incomplete data. There were 275 completed surveys (256 from the schools and 19 from the treatment center) included in the results creating a response rate of 92%.

The ages of the subjects ranged from 12 years old to 18 years old with a mean age of 14.0. Of the subjects, 165 (60%) were male and 110 (40%) were female. Those surveyed were primarily Hispanic, as evidenced by Table 1.
TABLE 1

Ethnicity of Subjects

<table>
<thead>
<tr>
<th>RACE</th>
<th>Frequency (N=275)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo</td>
<td>25</td>
<td>9.1</td>
</tr>
<tr>
<td>Black</td>
<td>33</td>
<td>12.0</td>
</tr>
<tr>
<td>Hispanic</td>
<td>213</td>
<td>77.5</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>1.5</td>
</tr>
<tr>
<td>Total</td>
<td>275</td>
<td>100.0</td>
</tr>
</tbody>
</table>

A majority of students in the study were currently in the eighth grade (See Table 2).

TABLE 2

Current Grade Level of Subjects

<table>
<thead>
<tr>
<th>Grade</th>
<th>Frequency (N=275)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>45</td>
<td>16.4</td>
</tr>
<tr>
<td>8</td>
<td>218</td>
<td>79.3</td>
</tr>
<tr>
<td>9</td>
<td>7</td>
<td>2.5</td>
</tr>
<tr>
<td>10</td>
<td>5</td>
<td>1.8</td>
</tr>
<tr>
<td>Total</td>
<td>275</td>
<td>100.0</td>
</tr>
</tbody>
</table>
The students in the ninth and tenth grades were subjects from the treatment center. Of the students surveyed, a majority reported that their parents were married (See Table 3).

**TABLE 3**

Parent's Marital Status

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>Frequency (N=275)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>168</td>
<td>61.1</td>
</tr>
<tr>
<td>Divorced</td>
<td>51</td>
<td>18.5</td>
</tr>
<tr>
<td>Separated</td>
<td>36</td>
<td>13.1</td>
</tr>
<tr>
<td>Other</td>
<td>20</td>
<td>7.3</td>
</tr>
<tr>
<td>Total</td>
<td>275</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Family Information

The subjects reported that 66.2% of their families use either alcohol, marijuana, or inhalants with 44% of them responding that the father was the user in the family. Family closeness was measured by the question "How close do you feel to your parents?". A total of 193 (70.1%) answered "fairly close" or "very close". A large percentage of the subjects (86.9) felt that their parents loved them, while 74.2% of the subjects reported that their
parents spent enough time with the family and 68.7% responded that their parents spent enough time with them.

When examining the parent's drug and alcohol use patterns in relationship to the subject's inhalant use patterns, a significant relationship was discovered chi-square \((1, n = 213) = 4.73, p=0.03\).

**Alcohol, Marijuana, and Inhalant Use Information**

The following section will report the incidence of alcohol, marijuana, and inhalant use for specific time periods.

**TABLE 4**

**Subject's Report of Alcohol, Marijuana, or Inhalant Use**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Yes</th>
<th>(N=275)</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
<td>Frequency</td>
</tr>
<tr>
<td>Alcohol</td>
<td>183</td>
<td>66.5</td>
<td>92</td>
</tr>
<tr>
<td>Marijuana</td>
<td>114</td>
<td>41.5</td>
<td>161</td>
</tr>
<tr>
<td>Inhalants</td>
<td>90</td>
<td>32.7</td>
<td>185</td>
</tr>
</tbody>
</table>
TABLE 5
Subject's Report of Alcohol, Marijuana, or Inhalant Use in the Last Year

<table>
<thead>
<tr>
<th>Substance</th>
<th>Yes</th>
<th>(N=275)</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
<td>Frequency</td>
</tr>
<tr>
<td>Alcohol</td>
<td>161</td>
<td>58.5</td>
<td>114</td>
</tr>
<tr>
<td>Marijuana</td>
<td>93</td>
<td>33.8</td>
<td>182</td>
</tr>
<tr>
<td>Inhalants</td>
<td>73</td>
<td>26.5</td>
<td>202</td>
</tr>
</tbody>
</table>

TABLE 6
Subject's Report of Alcohol, Marijuana, or Inhalant Use in the Last Month

<table>
<thead>
<tr>
<th>Substance</th>
<th>Yes</th>
<th>(N=275)</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Percent</td>
<td>Frequency</td>
</tr>
<tr>
<td>Alcohol</td>
<td>101</td>
<td>36.7</td>
<td>174</td>
</tr>
<tr>
<td>Marijuana</td>
<td>61</td>
<td>22.2</td>
<td>214</td>
</tr>
<tr>
<td>Inhalants</td>
<td>45</td>
<td>16.4</td>
<td>230</td>
</tr>
</tbody>
</table>

Of the subjects who named the inhalants that they used, a large number named "tolly" (toluene), (See Table 7).
TABLE 7
Type of Inhalant Used by the Subjects

<table>
<thead>
<tr>
<th>Substance</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolly</td>
<td>46</td>
<td>16.8</td>
</tr>
<tr>
<td>Paint</td>
<td>19</td>
<td>6.9</td>
</tr>
<tr>
<td>White out</td>
<td>12</td>
<td>4.4</td>
</tr>
<tr>
<td>Paint thinner</td>
<td>11</td>
<td>4.1</td>
</tr>
<tr>
<td>Gasoline</td>
<td>8</td>
<td>3.0</td>
</tr>
<tr>
<td>Wall</td>
<td>7</td>
<td>2.5</td>
</tr>
<tr>
<td>Markers</td>
<td>6</td>
<td>2.2</td>
</tr>
<tr>
<td>Rubber Cement</td>
<td>4</td>
<td>1.5</td>
</tr>
<tr>
<td>Other</td>
<td>19</td>
<td>6.9</td>
</tr>
</tbody>
</table>

The "Other" category includes: finger nail polish, finger nail polish remover, aerosol, glue, varnish, carbuerator cleaner, lysol, rush, ether, car exhaust, and gum remover.

The number of students who reported using inhalants was examined in relationship to their use of alcohol and marijuana. There was a significant relationship between alcohol use and inhalant use, chi-square (1, n = 213) = 36.83, p<0.0001. There was also a significant relationship
between the use of marijuana and the use of inhalants, chi-square (1, \(n = 213\)) = 66.14, \(p<0.0001\).

Locus of Control and Acculturation Information

The following information displays the mean scores (Internal, Powerful Others, Chance, and Acculturation) of the entire surveyed population, the Hispanic scores, and the scores of the Hispanic abstainers and inhalant users. The scores for the locus of control scales could range from 0-48. The scores on the acculturation scale could range from 1-5. The results are displayed in Table 8.

TABLE 8

Locus of Control and Acculturation Scores

<table>
<thead>
<tr>
<th></th>
<th>All (N=275)</th>
<th>Hispanic (n=213)</th>
<th>Hispanic Abstainers (n=138)</th>
<th>Hispanic Users (n=75)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>32.82</td>
<td>31.97</td>
<td>32.58</td>
<td>30.85</td>
</tr>
<tr>
<td>Powerful</td>
<td>22.51</td>
<td>22.28</td>
<td>23.01</td>
<td>20.93</td>
</tr>
<tr>
<td>Chance</td>
<td>23.14</td>
<td>22.94</td>
<td>23.51</td>
<td>21.89</td>
</tr>
<tr>
<td>Acculturation</td>
<td>2.40</td>
<td>3.09</td>
<td>3.06</td>
<td>3.14</td>
</tr>
</tbody>
</table>
Hispanic Incidence of Use, Locus of Control, and Acculturation Information

Incidence of use categories for the past year, for the past month, and ever (for Hispanics only) are illustrated in conjunction with locus of control and acculturation scores in Tables 9-11. All mean acculturation scores for the Hispanics (inhalant use ever, inhalant use in the last year, and inhalant use in the last month) in the survey were defined as Type 3 or true bicultural, and were not statistically significant within that category. However, the acculturation scores were statistically significant between the abstainer group and the combination of all three inhalant user groups when looking at the scores for "inhalant use ever", chi-square (1, n = 213) = 10.35, p=0.02. Although the difference in the mean scores for all locus of control groups was not considered statistically significant, it is interesting to note that all groups appeared more internally motivated than motivated by chance or powerful others. There was no significant difference between the scores of the male subjects and female subjects.
### TABLE 9
Hispanic Inhalant Use in the Last Year in Relationship to Locus of Control and Acculturation Scores

<table>
<thead>
<tr>
<th></th>
<th>Abstainer (n=138)</th>
<th>Experimental (n=43)</th>
<th>Occasional (n=14)</th>
<th>Chronic (n=18)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>32.58</td>
<td>31.37</td>
<td>33.21</td>
<td>27.78</td>
</tr>
<tr>
<td>Powerful</td>
<td>23.01</td>
<td>19.49</td>
<td>25.64</td>
<td>20.72</td>
</tr>
<tr>
<td>Chance</td>
<td>23.51</td>
<td>20.95</td>
<td>24.64</td>
<td>22.00</td>
</tr>
<tr>
<td>Acculturation</td>
<td>3.06</td>
<td>3.13</td>
<td>3.27</td>
<td>3.07</td>
</tr>
</tbody>
</table>

### TABLE 10
Hispanic Inhalant Use in the Last Month, in Relationship to Locus of Control and Acculturation Scores

<table>
<thead>
<tr>
<th></th>
<th>Abstainer (n=138)</th>
<th>Experimental (n=56)</th>
<th>Occasional (n=10)</th>
<th>Chronic (n=8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>32.58</td>
<td>30.38</td>
<td>33.70</td>
<td>29.62</td>
</tr>
<tr>
<td>Powerful</td>
<td>23.01</td>
<td>20.38</td>
<td>25.20</td>
<td>19.50</td>
</tr>
<tr>
<td>Chance</td>
<td>23.51</td>
<td>20.61</td>
<td>25.90</td>
<td>25.87</td>
</tr>
<tr>
<td>Acculturation</td>
<td>3.06</td>
<td>3.14</td>
<td>3.08</td>
<td>3.21</td>
</tr>
</tbody>
</table>
TABLE 11  Hispanic Inhalant Use (Ever) in Relationship to  
Locus of Control and Acculturation Scores  

<table>
<thead>
<tr>
<th></th>
<th>Abstainer (n=138)</th>
<th>Experimental (n=42)</th>
<th>Occasional (n=12)</th>
<th>Chronic (n=21)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td>33.58</td>
<td>31.02</td>
<td>34.00</td>
<td>28.71</td>
</tr>
<tr>
<td>Powerful</td>
<td>23.01</td>
<td>19.48</td>
<td>24.92</td>
<td>21.57</td>
</tr>
<tr>
<td>Chance</td>
<td>23.51</td>
<td>21.07</td>
<td>22.08</td>
<td>23.43</td>
</tr>
<tr>
<td>Acculturation</td>
<td>3.06</td>
<td>3.19</td>
<td>3.25</td>
<td>3.19</td>
</tr>
</tbody>
</table>

When analyzing the three variables (incidence of use, locus of control, and acculturation), no significant relationship between male and female subjects was found. Each of the three variables (incidence of inhalant use, locus of control, and acculturation) was examined by crosstabulating two variables while controlling for the third, and no significant interaction effect was found. The Pearson Product Moment Correlation between level of acculturation and incidence of inhalant use is reported as $r=0.04$ for Hispanics. Between locus of control and incidence of use the correlation for Hispanics is reported as $(I) r=-0.12$, $(P) r=-0.03$, and $(C) r=-0.02$. Finally, the correlation between locus of control and acculturation is reported as $(I) r=0.03$, $(P) r=0.09$, and $(C) r=-0.14$. 
CHAPTER V

CONCLUSIONS

Summary

The purpose of the study was to determine the relationship between the variables of acculturation and locus of control as they relate to the incidence of inhalant use among Mexican American adolescents. A total of 275 students from 3 middle schools and one treatment center from the Dallas area participated in the survey.

The statistical evaluation of the data involved consideration of the relationships between incidence of use and acculturation, incidence of use and locus of control, and acculturation and locus of control. Other statistics examined demographics and family relationships.

The hypotheses formulated for this study stated there would be a significant difference between degrees of acculturation and incidence of use, as well as a significant difference between locus of control and incidence of use among test subjects. Furthermore, a hypothesis was formulated which stated that there would be a significant interaction effect among the three variables.
The study successfully proved the hypothesis stating there would be a significant relationship between degrees of acculturation and incidence of inhalant use, but only between the abstainer's group and the combination of the inhalant using groups.

The hypothesis stating that a relationship would exist between locus of control (internal, powerful others, and chance) and incidence of inhalant use was rejected.

The hypothesis stating that there would be a significant interaction effect among the three variables (acculturation, incidence of use, and locus of control) was rejected.

Major Findings

Based on the results reported in the survey, the following conclusions regarding acculturation, incidence of use, and locus of control of Mexican American students from the Dallas, Texas area appear to be appropriate.

1. Although many of the Mexican American students are bicultural, the students who used inhalants were more "Anglicized" than their abstaining classmates.

2. Although all groups scored highest on the internal scale, an individual's locus of control (internal, powerful others, and chance) does not appear to be a significant factor in an inhalant users life.
3. There appears to be no significant interaction effect among acculturation, incidence of use, and locus of control.

4. There is a significant relationship between the use of alcohol, marijuana, or inhalants by a family member and the use of inhalants by the subjects.

5. Inhalant use appears to be directly related to the use of alcohol and marijuana.

6. A large number of students from the schools surveyed have used alcohol, marijuana, or inhalants.

7. Although the public generally views inhalant users as living in dysfunctional homes, a large number of subjects reported stable home lives.

8. There was no significant relationships found between male and female subjects.

Implications

These results indicate that a large percentage of adolescents (32.7%) from the Dallas area have tried inhalants. Equally as alarming are the percentages of students who have tried alcohol (66.5%) and marijuana (41.5%), and the strong relationship that inhalants have to both of these substances. It appears that along with primary prevention activities efforts also need to be focused on education and intervention.
Unfortunately, there is a strong relationship between a family member's use and the subject's use of inhalants. Approximately two-thirds (66.2%) reported that a family member used alcohol, marijuana, or inhalants, with almost half (44%) reporting that the father was the user. This implies that children of substance users should be regarded as a high risk group for primary prevention programs, education, and intervention.

It is interesting to note that although "tolly" (16.8%) and paint (6.9%) were the two most commonly used inhalants, "white out" or typewriter correction fluid, two products typically found in schools were the third most popular (4.4%). Three other products commonly used in schools, markers (2.2%), rubber cement (1.5%), and glue were also mentioned.

A large percentage of the chronic inhalant users (81%) were the ninth and tenth grade students surveyed in the treatment center. It is unfortunate that some of the occasional and experimental inhalant users in the middle schools today probably will be the chronic inhalant users in treatment in the future, unless intervened upon early.

Many of the students appeared to have stable home lives in spite of their use or a family member's use. Of the students surveyed 61.1% of the parents were married, 70% reported feeling "fairly close" or "very close" to their parents, 86.9% felt that their parents loved them enough,
while 74.2% and 68.7% reported that their parents spent enough time with the family and with them respectively. This finding contradicts the commonly held belief that young people involved with alcohol and other drugs come from dysfunctional families.

There were no significant relationships among the three locus of control scores (internal, chance, and powerful others), but the internal scores were consistently the highest for all categories of subjects. This implies that the subjects, as a whole, felt that they had control in their lives and were not motivated by chance or powerful others.

The mean acculturation scores were all within the type 3 or true bicultural category of the acculturation scale. The higher scores belonged to the students who were inhalant users. This finding indicates that acculturation is a factor that may need further investigation.

**Recommendations**

The following recommendations appear appropriate based on the results of the study:

1. Prevention and treatment programs should develop and utilize new strategies involving acculturation and coping skills.

2. Prevention and treatment programs for Hispanics need to focus on all "gateway" drug (alcohol,
marijuana, and inhalants) rather than concentrating solely on inhalants.

3. Primary prevention programs should be targeted at children of substance users.

4. School officials need to be educated on the common inhalants that students use in the classroom.

5. Inhalants such as white out, markers, rubber cement, and glue should not be required school supply items.

6. More community based and school based educational/intervention programs should begin with elementary school-aged children.

7. Increased parental education regarding their influence on their children's inhalant, alcohol, and marijuana use is needed.

Suggestions for Further Research

The following suggestions are recommended for further research:

1. The current study utilized a sample of Hispanic subjects from a single city, thus the generalizability of this data to the broader population is limited. An important step is to develop comparable data on a more representative community sample of inhalant users.
2. Research needs to examine more closely the relationship between inhalant use and the use of alcohol and marijuana, as well as other drugs.

3. Parents should be surveyed to ascertain whether or not they recognize inhalant use as a problem in their community.

4. Although the non Hispanic population that completed surveys was not examined in this study, the incidence of Anglo and Black inhalant use needs to be investigated in the primarily Hispanic communities.

5. Further research is needed to examine the efficacy of current prevention and treatment methods as they relate to inhalant use.
APPENDICES
APPENDIX A

LIST OF INHALANTS
LIST OF INHALANTS

Anesthetics
Nitrous Oxide
Ether

Solvents
Toluene
Gasolene
Paint thinner
Varnish
Auto body cleaners
Furniture stains
Fingernail polish remover
Varnish remover
Household cleaning supplies
Rubber cement
Glue
Freon
Typewriter correction fluid
Printer fluid
Lighter fluid
Copier fluid
Charcoal starter fluid
Shoe polish

Nitrites
(Iso) Amyl nitrite
(Iso) Butyl nitrite

Aerosols
Spray paint
Hair spray
Engine cleaners
Paint strippers
Tire sealant
Window cleaners
Shoe shine products
Cleaning supplies
Deodorants
Stain removers
Leather coatings
Frying pan coatings
Engine drying agents
APPENDIX B

QUESTIONNAIRE
Dear Participant:

You have been selected as part of a sample that will represent adolescents in the Dallas area. Your participation in this project is completely voluntary. You are free to discontinue your participation at any time.

The study is sponsored by the health education department of the University of North Texas. It is part of a research project that must be completed for a master's thesis. The goal of the project is to examine adolescent ideas and behaviors. An extensive report on the survey will be published as a master's thesis and will be on file at the University of North Texas.

Your answers and comments will be strictly confidential and will be seen only by the researcher. The results will be reported in statistical form only, and no response will be able to be associated with any individual.

It is possible to complete this survey in approximately 30 minutes. Please take time to do this now. Your cooperation and honesty will help to make this survey accurate and useful. Thank you for your assistance in this important study.

Sincerely,

Lynn M. Davis
University of North Texas
Directions: Please provide the following information. Thank you.

Age __________ Sex (circle one) M  F

Current grade in school ______ Race (circle one) White Black Hispanic Other

Parents marital status (circle one) Married Divorced Separated Other

Directions: On the next few pages there are a series of statements. Each represents a commonly held opinion. There are no right or wrong answers. You will probably agree with some items and disagree with others. I am interested in the extent to which you agree or disagree with such matters.

Read each statement carefully. Then indicate the extent to which you agree or disagree by circling the number following the statement. The numbers and meanings are indicated below:

If you strongly agree: Circle +3
If you agree somewhat: Circle +2
If you agree slightly: Circle +1
If you disagree slightly: Circle -1
If you disagree somewhat: Circle -2
If you disagree strongly: Circle -3

First impressions are usually best. Read each statement, decide if you agree or disagree and the strength of your opinion, and then circle the appropriate number. If you find that the numbers do not adequately reflect your opinion, use the one that is closest to the way you feel.

Please give your opinion on every statement. Thank you.
<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree Somewhat</th>
<th>Slightly Disagree</th>
<th>Slightly Agree</th>
<th>Agree Somewhat</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Whether or not I get to be a leader depends mostly on my ability.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>2. To a great extent my life is controlled by accidental happenings.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>3. I feel like what happens in my life is mostly determined by powerful people.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>4. Whether or not I get into a car accident depends mostly on how good a driver I am.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>5. When I make plans, I am almost certain to make them work.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>6. Often there is no chance of protecting my personal interests from bad luck happenings.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>7. When I get what I want, it's usually because I'm lucky.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>8. Although I might have good ability, I will not be given leadership responsibility without appealing to those in position of power.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>Statement</td>
<td>Strongly Disagree</td>
<td>Disagree somewhat</td>
<td>Slightly Disagree</td>
<td>Slightly Agree</td>
<td>Agree somewhat</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>----------------</td>
</tr>
<tr>
<td>9. How many friends I have depends on how nice a person I am.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>10. I have often found that what is going to happen will happen</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>11. My life is chiefly controlled by powerful others.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>12. Whether or not I get into a car accident is mostly a matter of luck.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>13. People like myself have very little chance of protecting our personal interests when they conflict with those of strong pressure groups.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>14. It's not always wise of me to plan too far ahead because many things turn out to be a matter of good or bad fortune.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>15. Getting what I want requires pleasing those people above me.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>16. Whether or not I get to be a leader depends on whether I'm lucky enough to be in the right place at the right time.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>Statement</td>
<td>Strongly Disagree</td>
<td>Disagree Somewhat</td>
<td>Slightly Disagree</td>
<td>Slightly Agree</td>
<td>Agree Somewhat</td>
<td>Strongly Agree</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>---------------</td>
</tr>
<tr>
<td>17. If important people were to decide they didn't like me, I probably wouldn't make many friends.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>18. I can pretty much determine what will happen in my life.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>19. I am usually able to protect my personal interests.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>20. Whether or not I get into a car accident depends mostly on the other driver.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>21. When I get what I want, it's usually because I worked hard for it.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>22. In order to have my plans work, I make sure that they fit in with the desires of people who have power over me.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>23. My life is determined by my own actions.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
<tr>
<td>24. It's chiefly a matter of fate whether I have a few friends or many friends.</td>
<td>-3</td>
<td>-2</td>
<td>-1</td>
<td>+1</td>
<td>+2</td>
<td>+3</td>
</tr>
</tbody>
</table>
If you do not consider yourself as part of one of the following groups, please skip this part and move on to question number 45.

Mexican, Mexican American, Hispanic American, Chicano, Spanish American, Latin American.

Direction: Circle the number next to the answer that best fits the question. Circle only one. Thank You. Please answer all questions.

25. What language do you speak?

1. Spanish only
2. Mostly Spanish, some English
3. Spanish and English about equally
4. Mostly English, some Spanish
5. English only

26. What language do you prefer?

1. Spanish only
2. Mostly Spanish, some English
3. Spanish and English about equally
4. Mostly English, some Spanish
5. English only

27. How do you identify yourself?

1. Mexican
2. Chicano
3. Mexican American
4. Spanish American, Latin American, Hispanic American, American
5. Anglo American or other

28. Which ethnic identification does (did) your mother use?

1. Mexican
2. Chicano
3. Mexican American
4. Spanish American, Latin American, Hispanic American, American
5. Anglo American or other

29. Which ethnic identification does (did) your father use?

1. Mexican
2. Chicano
3. Mexican American
4. Spanish American, Latin American, Hispanic American, American
5. Anglo American or other

30. What was the ethnic origin of the friends and peers you had as a child up to age 6?

1. Almost exclusively Mexicans, Chicanos, Mexican Americans (La Raza)
2. Mostly Mexicans, Chicanos, Mexican Americans
3. About equally Raza (Mexicans, Chicanos, Mexican Americans) and Anglos or other ethnic groups
4. Mostly Anglos, Blacks, or other ethnic groups
5. Almost exclusively Anglo, Blacks, or other groups
31. What was the ethnic origin of the friends and peers you had from age 6 to age 18?

1. Almost exclusively Mexicans, Chicanos, Mexican Americans (La Raza).
2. Mostly Mexicans, Chicanos, Mexican Americans
3. About equally Raza (Mexicans, Chicanos, Mexican Americans) and Anglos or other ethnic groups
4. Mostly Anglos, Blacks, or other ethnic groups
5. Almost exclusively Anglos, Blacks, or other groups

32. Whom do you associate with now in the outside community?

1. Almost exclusively Mexicans, Chicanos, Mexican Americans (La Raza)
2. Mostly Mexicans, Chicanos, Mexican Americans
3. About equally Raza (Mexicans, Chicanos, Mexican Americans) and Anglos or other ethnic groups
4. Mostly Anglos, Blacks, or other ethnic groups
5. Almost exclusively Anglos, Blacks, or other groups

33. What is your music preference?

1. Only Spanish
2. Mostly Spanish
3. Equally Spanish and English
4. Mostly English
5. English only

34. What is your TV viewing preference?

1. Only programs in Spanish
2. Mostly programs in Spanish
3. Equally Spanish and English programs
4. Mostly programs in English
5. Only programs in English

35. What is your movie preference?

1. Spanish language movies only
2. Spanish language movies mostly
3. Equally English/Spanish
4. English language movies mostly
5. English language movies only

36. a. Where were you born?

1. Mexico 2. U.S. 3. Other

b. Where was your father born?

1. Mexico 2. U.S. 3. Other
c. Where was your mother born?

1. Mexico 2. U.S. 3. Other
d. Where was your father's mother (your grandmother) born?

1. Mexico 2. U.S. 3. Other
e. Where was your father's father (your grandfather) born?

1. Mexico 2. U.S. 3. Other
f. Where was your mother's mother (your grandmother) born?

1. Mexico 2. U.S. 3. Other
g. Where was your mother's father (your grandfather) born?

1. Mexico 2. U.S. 3. Other

On the basis of the above answers, circle one of the five generations that best applies to you.

1. 1st generation=you were born in Mexico or other.
2. 2nd generation=you were born in the U.S. and either parent was born in Mexico or other.
3. 3rd generation=you were born in the U.S. and all grandparents were born in Mexico or other.
4. 4th generation=you and your parents born in U.S. and at least one grandparent born in Mexico or other with the remainder born in the U.S.

5. 5th generation=you and your parents born in the U.S. and all grandparents born in the U.S.

37: Where were you raised?
1. In Mexico only
2. Mostly in Mexico, some in U.S.
3. Equally in U.S. and Mexico
4. Mostly in U.S., some in Mexico
5. In U.S. only

38. What contact have you had with Mexico?
1. Raised for one year or more in Mexico
2. Lived for less than one year in Mexico
3. Occasional visits to Mexico
4. Occasional communications with people in Mexico
5. No exposure or communications with people in Mexico

39. What is your food preference?
1. Exclusively Mexican food
2. Mostly Mexican food, some American
3. About equally Mexican and American
4. Mostly American food
5. Exclusively American food

40. In what language do you think?
1. Only in Spanish
2. Mostly in Spanish
3. Equally in English and Spanish
4. Mostly in English
5. Only in English

41. Can you read Spanish Yes No
Can you read English Yes No
Please circle one of the following:
1. Reads only Spanish
2. Reads Spanish better than English
3. Reads both Spanish and English equally well
4. Reads English better than Spanish
5. Reads only English

42. Can you write in English Yes No
Can you write in Spanish Yes No
Please circle one of the following:
1. Writes only Spanish
2. Writes Spanish better than English
3. Writes both Spanish and English equally well
4. Writes English better than Spanish
5. Writes only in English

43. If you consider yourself a Mexican, Chicano, Mexican American, member of La Raza, or however you identify this group, how much pride do you have in this group?
1. Extremely proud
2. Moderately proud
3. Little pride
4. No pride but does not feel negative toward the group
5. No pride and feels negative toward La Raza

44. How would you rate yourself?
1. Very Mexican
2. Mostly Mexican
3. Bicultural
4. Mostly Anglo
5. Very Anglo
The next few questions ask about your drug and alcohol use. Remember, only the researcher will see your answers. All answers are confidential. Please answer the following questions as honestly as possible. Circle only one answer.

45. Have you ever used alcohol in your life?
   1. Yes
   2. No

46. How often have you used alcohol in the past year?
   1. never
   2. rarely
   3. sometimes
   4. often
   5. daily

47. How often have you used alcohol in the past month?
   1. never
   2. rarely
   3. sometimes
   4. often
   5. daily

48. Have you ever used marijuana in your life?
   1. Yes
   2. No

49. How often have you used marijuana in the past year?
   1. never
   2. rarely
   3. sometimes
   4. often
   5. daily

50. How often have you used marijuana in the past month?
   1. never
   2. rarely
   3. sometimes
   4. often
   5. daily

51. Have you ever sniffed, "huffed", or inhaled any gasses or vapors in order to get high in your life?
   1. Yes
   2. No

52. How often have you sniffed, "huffed", or inhaled any gasses or vapors in the past year?
   1. never
   2. rarely
   3. sometimes
   4. often
   5. daily

53. How often have you sniffed, "huffed", or inhaled any gasses or vapors in the past month?
   1. never
   2. rarely
   3. sometimes
   4. often
   5. daily

54. Please list the things that you have sniffed, "huffed", or inhaled in order to get high. (Don't worry about the correct spelling)
   a. ______________________
   b. ______________________
   c. ______________________
The final questions ask about your family life. Remember, it is important that you are as honest as possible. All answers are confidential. Please give your opinion on every statement. Thank you.

55. Do any of your family members use alcohol, marijuana, or inhalants?
   1. Yes
   2. No

56. Which family members use alcohol, marijuana, or inhalants?
   1. Father
   2. Mother
   3. Brother
   4. Sister
   5. Other

57. How close do you feel to your parents?
   1. not at all
   2. a little
   3. average
   4. fairly close
   5. very close

58. Do you feel that your parents love you enough?
   1. Yes
   2. No

59. Do you feel that your parents spend enough time with the family?
   1. Yes
   2. No

60. Do you feel that your parents spend enough time with you?
   1. Yes
   2. No

Thank you for your help on this survey.
BIBLIOGRAPHY


