Consideration of race/ethnicity in adolescent substance abuse treatment outcome studies

Marilyn J Strada
University of Nevada, Las Vegas

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CONSIDERATION OF RACE/ETHNICITY IN
ADOLESCENT SUBSTANCE ABUSE
TREATMENT OUTCOME STUDIES

by

Marilyn J. Strada

Bachelor of Arts
Chapman University
2002

A thesis submitted in partial fulfillment of the requirements for the

Master of Arts Degree in Psychology
Department of Psychology
College of Liberal Arts

Graduate College
University of Nevada, Las Vegas
August 2004
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The Graduate College
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May 12, 2004

The Thesis prepared by

Marilyn J. Strada

Entitled

Consideration of Race, Ethnicity, and Culture-Related Variables in Adolescent Substance Abuse Treatment Outcome Studies

is approved in partial fulfillment of the requirements for the degree of

Master of Arts in Psychology

Examination Committee Chair

Dean of the Graduate College
ABSTRACT

Consideration of Race/Ethnicity in Adolescent Substance Abuse Treatment Outcome Studies

by

Marilyn J. Strada

Dr. Bradley Donohue, Thesis Committee Chair
Associate Professor of Psychology
University of Nevada, Las Vegas

Substance use among youth continues to be a major concern in the United States. Several treatments have been developed for youth, but their external validity racially/ethnically diverse populations have not been evaluated for use in ethnic populations. The purpose of this paper was to examine the extent to which adolescent substance use treatment outcome studies have considered race/ethnicity-related factors in the design, implementation, and evaluation of treatments to determine degree of generalizability in racially/ethnically diverse populations. The findings underscored (1) discrepancies between treatment needs of racially/ethnically diverse youth and substances targeted in treatment, (2) the urgent need to focus on culturally sensitive recruitment strategies to increase participation of ethnic youth in treatment research, and (3) consideration of race/ethnicity in adolescent substance abuse treatment research has not changed significantly over the past three decades, with most studies providing limited information to answer the question of With whom are the treatments efficacious?
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CHAPTER I

INTRODUCTION

Substance use among youth continues to be a major concern in the United States. Although some sources have reported stabilizing trends in the prevalence of adolescent substance use (Substance Abuse and Mental Health Services Administration (SAMHSA), 2003), the figures are still alarming. Additionally, the number of adolescents entering substance abuse treatment has increased in the past few years (U.S. Department of Health and Human Services (HHS), 2003). High prevalence rates and increases in treatment admissions are of concern because of the negative consequences associated with substance use, such as increased likelihood of engaging in risky behaviors (e.g., driving under the influence of substances, juvenile delinquency), health-related problems (e.g., disruption of cognitive development), and increased risk for lower academic achievement (e.g., lower grades; Waldron, 1997).

With an increased need to treat the adolescent population, more efforts have been devoted to the development and evaluation of effective treatment modalities. Although many adolescent treatment approaches have been developed based on adult populations, the unique characteristics of adolescents (e.g., different cognitive functioning, higher peer pressure, simultaneous use of multiple substances) raise issues related to treatment
fidelity and effectiveness (Bukstein, 1994; Waldron, 1997). Recently, research has moved
toward the use of efficacious or empirically supported therapies (ESTs), derived
primarily from studies in which randomized clinical trial methodology is implemented.
Unfortunately, relatively few studies on the treatment of adolescent substance use have
been evaluated in this manner. In support of these research initiatives, the National
Institute on Drug Abuse (NIDA; 1999) published a listing of scientifically based
approaches that have been evaluated in randomized clinical trials and been found to be
effective in the treatment of adolescent substance use (e.g., Behavioral Therapy,
Multisystemic Therapy, Family Functional Therapy). These forms of therapy incorporate
treatment components particularly relevant to adolescents (i.e., impulsive behaviors,
academic achievement, and inclusion of family members and school officials).

Nevertheless, variations regarding the definition of ESTs across agencies in the field
have resulted in differing conclusions about which treatments can be considered
efficacious. For instance, the American Psychological Association (APA) Division 12
established criteria to evaluate treatments prior to determining their efficaciousness,
which differs from the criteria utilized in the NIDA’s publication of scientifically based
approaches. However, APA’s evaluation has not, thus far, focused on substance abuse
treatments for adolescents.

While gradual progress is being made in the development and evaluation of ESTs that
address the special needs of adolescents, the unique needs of most ethnically and racially
diverse youth (i.e., African American, Asian American, Hispanic/Latino, Native
American) remain unattended. U.S. Census (1996) estimates suggest the overall
population of racially/ethnically diverse groups is likely to reach 50% of the population by the year 2050. Furthermore, substance use rates among members of these populations are also increasing, with use rates for some substances being equal to or higher than those reported by Caucasian youth (SAMHSA, 2003). In addition, patterns of substance use among ethnically diverse youth, as described later in this paper, tend to differ from those observed among Caucasian youth (CDCP, 2002). Furthermore, both substance use prevalence rates and use patterns are affected by different risk factors related to race and ethnicity variables (Center for Substance Abuse Treatment (CSAT), 2001; Beauvais, 1998; Caetano, Clark, & Tam, 1998; Jones-Webb, 1998; Makimoto, 1998).

Although unique characteristics of substance abuse patterns of members of diverse ethnic backgrounds have been identified (e.g., differences in treatment needs; Bernal & Scharron-del-Rio, 2001), these issues have yet to be addressed empirically in treatment outcome studies. This gap in the research between adolescent substance abuse treatment and efficacy in various racial/ethnic groups has led to skepticism on the validity of ESTs in ethnic populations (e.g., Clay, Mordhorst, & Lehn, 2002; Bernal & Scharron-del-Rio, 2001; Hall, 2001; Sue, 1998). Despite the lack of attention to supporting evidence, it has been recommended that ESTs be used in the treatment of racially/ethnically diverse individuals (Chambless, et al., 1996). Additionally, current research tends to exhibit a disproportionately low representation of ethnic participants in study samples, the absence of considerations regarding cultural factors that have been associated with treatment outcome (e.g., acculturation level, cultural identity), the grouping of participants from diverse racial/ethnic backgrounds in statistical analyses, and limited descriptions of study
participants (Bernal & Scharron-del-Rio, 2001), all warranting changes in current research practices.

It has been hypothesized that unique characteristics and culture-related factors associated with substance use prevalence rates and use patterns, which differ from those of Caucasians and/or members of the mainstream culture, may result in differential responses to treatment (Bernal & Scharron-del-Rio, 2001; Hall, 2001). Nonetheless, differences in response to treatment have not been thoroughly investigated due to inadequate representation of racially/ethnically diverse individuals in study samples and lack of effect size reports specified separately for each ethnic group, which may otherwise permit meta-analytic examinations. Therefore, a starting point may be to examine this topic in a qualitative manner. Thus, the purpose of the present paper is to conduct a content analysis of (a) the extent to which adolescent substance use treatment outcome studies have considered ethnicity-related factors in the design, implementation, and evaluation of treatments and (b) the extent to which these studies may generalize to ethnically diverse populations (see next Chapter for detailed description of variables of interest).
CHAPTER II

LITERATURE REVIEW

A review of the literature pertinent to the current proposal is presented below. These sections include the following two major areas: 1) Adolescent Substance Abuse and 2) Cultural Issues in Psychological Treatment. The first section includes epidemiological data on the general adolescent population and a description of treatment modalities for adolescent substance use. The second section presents substance use prevalence rates, substance use patterns, and cultural-related factors that may contribute to substance use in members of the four major ethnic/racial groups (i.e., African Americans, Asian Americans, Hispanic Americans, and Native Americans). Within the second section, arguments contesting the validity of ESTs are reviewed.

Adolescent Substance Abuse

The high prevalence rates of adolescent substance use, as well as the number of adolescents entering substance abuse treatment continues to be of great national concern. This is particularly the case given the negative consequences resulting from habitual substance use in adolescence. Some of these include increased incidence of problem behaviors (e.g., juvenile delinquency, poor academic performance) and possible disruption of cognitive development (Buckstein, 1994). Other consequences include
increased risk for engaging in high-risk behaviors. For instance, 13% of youth in grades 9th through 12th reported having driven a car, or other vehicle, one or more times after having consumed alcohol (CDCP, 2002). Despite recent reports of stabilizing rates of alcohol and illicit drug use, current use rates of these substances among adolescents remain high (SAMHSA, 2003; CDCP, 2002). In the following section, prevalence rates for substance use and abuse among youth in the general population are presented. These figures reflect the combined use rates for both Caucasian and racially/ethnically diverse youth. Estimated prevalence rates for ethnic minority youth are discussed later in the next section.

**Epidemiological Data**

The results of two major, national surveys are discussed in this section. The Youth Risk Behavior Surveillance, U.S. 2001 (CDCP, 2002) and the National Household Survey for 2002 (SAMHSA, 2003). The former includes data on lifetime (i.e., ever tried the substance during lifetime) and current (i.e., use during the 30 days preceding the survey) substance use from youth attending grades 9th through 12th across 34 states. The sample included 13,601 respondents, with the following characteristics: 51.3% female, 48.7% male, 67.5% Caucasian, 12% African American, 11.9% Hispanic/Latino, and 8.6% other ethnicity.

The second survey (SAMHSA, 2003) includes data from 23,645 respondents ages 12 to 17 from all 50 states. Their characteristics were as follows: 51% male, 49% female, 66% Caucasian, 14% Hispanic or Latino, 13% African American, 3% Asian American and Pacific Islander, 3% biracial and/or multiracial, and 1% Native American or Alaska Native. Unlike data from the CDCP (2002), data from the SAMHSA (2003) survey
includes responses from youth both in and out of schools in all 50 states. It is administered directly at households, noninstitutional groups, such as shelters and dormitories, and to civilians residing in military bases. Each year SAMHSA’s findings are utilized to make lifetime, past year, and past month substance use estimates for the entire population.

Both the CDCP and the SAMHSA surveys have strengths and limitations. Thus, data from both surveys are presented in an attempt to offer a balanced representation of substance use prevalence among adolescents. For instance, information gained from the CDCP (2002) survey is limited because it is not representative of all youth in the surveyed age group, and because data are collected only for youth attending school (i.e., excludes approximately 5% of those youth ages 16 to 17 years). In addition, CDCP (2002) data is not representative of youth in all states, and it provides limited information with regards to ethnicity. In contrast, one of SAMHSA’s (2003) major strengths is that data is collected from youth regardless of school attendance status. Nevertheless, data from homeless persons not in shelters, active-duty military individuals, and institutional groups (e.g., prisons, long-term hospitals) are excluded. In addition, interviews were originally conducted in-person, which may have an impact on the accuracy of the responses due to possible social desirability effects. This interview format has recently changed to self-interview with the use of computer equipment. However, issues related to familiarity with technology may also affect responses. Another limitation of household-based interviews is the extent to which youth may feel comfortable to respond to the survey in a confidential manner, given that the parents may be present at the time of the survey. Applicable to both surveys are the limitations of self-report questionnaires in data
collection. Although a combination of biological markers (e.g., urinalysis), collateral reports, and self-reports certainly enhance the reliability of data, self-reports alone are commonly considered a reliable method to data gathering, if done under conditions in which anonymity and confidentiality are ensured (O’Malley, Johnson, & Bachman, 1999). Interestingly, as seen on Table 1, in settings assumed to provide a confidential environment (i.e., school survey) reports tend to reflect substantially higher substance use. However, it is difficult to determine whether this is reflective of higher reporting accuracy. Despite the limitations described above, both the CDCP (2002) and the SAMHSA (2003) surveys are among the most reliable sources of data for estimating the populations’ substance use prevalence. Specific figures on lifetime and current substance use estimates from both surveys are presented in Table 1 below.

Table 1  Youth Substance Abuse Prevalence

<table>
<thead>
<tr>
<th>Substance</th>
<th>CDCP Lifetime</th>
<th>CDCP Current</th>
<th>SAMHSA Lifetime</th>
<th>SAMHSA Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>78.2</td>
<td>47.1</td>
<td>43.4</td>
<td>17.6</td>
</tr>
<tr>
<td>Marijuana</td>
<td>42.2</td>
<td>23.9</td>
<td>20.6</td>
<td>8.2</td>
</tr>
<tr>
<td>Cocaine</td>
<td>9.4</td>
<td>4.2</td>
<td>2.7</td>
<td>0.6</td>
</tr>
<tr>
<td>Inhalant</td>
<td>14.7</td>
<td>4.7</td>
<td>10.5</td>
<td>1.2</td>
</tr>
<tr>
<td>Heroin</td>
<td>3.1</td>
<td>Not specified</td>
<td>0.4</td>
<td>0</td>
</tr>
<tr>
<td>Methamphetamines</td>
<td>9.8</td>
<td>Not specified</td>
<td>1.5</td>
<td>0.3</td>
</tr>
</tbody>
</table>

Note: CDCP (2002): Reports from school-based surveys with youth in grades 9th through 12th (N=13,601); SAMHSA: Estimates of nationwide youth population ages 12 to 17 based on household surveys (N=23,645). In both surveys, current use reflects indication of substance use during the 30-day period prior to responding to the survey.
In addition to the two national surveys presented above, Kilpatrick and colleagues' (2000) National Survey of Adolescents (NSA), with a sample of 4,023 youth ages 12 to 17 years, provided the first estimate of substance abuse or dependence prevalence (i.e., based on DSM-IV criteria). This study gathered data through telephone interviews to respondents’ households. It covered at least 93% of U.S. adolescents, with the exception of those institutionalized, homeless, and/or without a parent or guardian. Age and ethnicity descriptions were available for 3,907 respondents. Of these adolescents, 51% were male, 49% were female, 72% were Caucasian, 15% were African American, 8% were Hispanic, 4% were Native American, and 1% were Asian American.

For alcohol abuse or dependence, the NSA estimated overall prevalence of 4% for both alcohol and marijuana among adolescents in the age group of 12 to 17 years. The past year prevalence of this disorder was highest among 17-year-olds (11%), with similar rates for 15-, 16-, and 17-year-olds (6%, 7%, and 7% respectively). Abuse and dependence of cocaine, heroin, inhalants, LSD, and prescription drugs was grouped under the category of hard drugs. The overall prevalence for hard drug abuse and/or dependence was estimated at 1%, with 2% of both 16- and 17-year-olds meeting DSM-IV criteria for this disorder.

The epidemiological data presented above highlights the extent to which adolescent substance use continues to be a national concern that warrants attention. Examinations of epidemiological data are instrumental in treatment research, as they are useful in identifying substances that should be the focal point of research. Thus, epidemiological studies often guide the direction of future research, particularly with regard to treatment outcome.
Substance Abuse Treatment

The Treatment Episode Data Set (HHS, 2003) reported increases in the number of adolescents admitted to substance use treatment during the past eight years, particularly for some age groups. The percentage of those admitted for substance use treatment increased slightly for youth ages 12 to 14 in 2000 (from 1.4%, or 22,007, to 1.5%, or 23,667). However, larger increases were reported for youth in other age groups. For instance, among youth ages 15 to 17 there was an increase from 4.8% (72,993) in 1992 to 6.7% (107,509) in 2000. Youth ages 11 and under had the lowest percentage, decreasing from .3% (3920) in 1992 to .2% (3181) in 2000. Although this trend may or may not necessarily indicative of higher substance use rates in this population, it stresses the importance of developing, implementing, and evaluating adolescent substance abuse treatments. This is particularly so given the scarcity of adolescent substance abuse controlled treatment outcome studies, as compared with research for adult populations (e.g., Bukstein, 1994; Winters, Latimer, & Stinchfield, 1999). Nevertheless, as adolescents’ unique needs for substance abuse treatment have gained attention, new treatment modalities have been developed and implemented. However, most have been developed after adult models of treatment, and some still fail to include distinctive characteristics relevant to adolescent substance abuse (e.g., adolescents are more likely than adults to use and abuse multiple substances).

The modification of treatment modalities to address the unique characteristics of adolescents is important, as they may impact treatment outcome. Some of these characteristics include differences in both alcohol drinking and drug use patterns. Indeed, adolescents are more likely to use and abuse multiple substances (Bukstein, 1994) and
consume larger doses (Waldron, 1997) than adults. Also, adolescents experience lower incidence of physical and psychological substance dependence symptoms (Bukstein, 1994), but due to smaller body size and lesser degree of tolerance than adults, adolescents may experience more dangerous effects with smaller doses of the substance (Waldron, 1997). Furthermore, adolescent substance use and abuse is associated with different clusters of psychiatric disorders and symptoms (e.g., conduct disorder) than those seen in adults. Moreover, there are several important developmental characteristics to consider in the treatment of adolescents. Some of these include dependency on the family and society for resources, cognitive limitations due to age, and susceptibility to peer pressure (Bukstein, 1994). Clearly, recognizing these distinct characteristics is crucial, as they may require modifications and special consideration in treatment planning and implementation.

Also crucial is the evaluation of treatment effectiveness once pertinent considerations and modifications have been made. Establishing effectiveness requires empirically demonstrating that the treatment was successful in reducing the predetermined symptomatology in the specified population. Chambless and Hollon (1998) have proposed formal terminology and steps involved in this process. They defined efficacious therapies as Empirically Supported Therapies (ESTs) that are “clearly specified psychological treatments shown to be efficacious in controlled research with a delineated population” (p. 7). Furthermore, Chambless and Hollon (1998) also propose that answering the following questions is also required when evaluating treatments: 1) “Has the treatment shown to be beneficial in controlled research? 2) Is the treatment useful in applied clinical settings and, if so, with what patients and under what circumstances? 3)
Is the treatment efficient in the sense of being cost-effective relative to other alternative interventions?” (p.7). Sue (1998) defined additional criteria required to establish efficacy of empirically derived treatments for ethnic populations. These criteria included assessment of the condition before and after treatment implementation, block randomization of participants from ethnic backgrounds, utilization of multiple, culturally appropriate measures, and replication of findings.

Overall, Chambless and Hollon’s (1998) concerns are related to internal and external validity. Regarding internal validity, emphasis is placed on ensuring that treatment effects are indeed related to the treatment. Thus, their strong recommendation is for the implementation of randomized clinical trials in the evaluation of treatment effectiveness. The second concern is regarding external validity. Chambless and Hollon (1998) strongly advocate replication with similar findings by at least one other independent researcher. Another caveat related to external validity is the clear definition of the sample for which the treatment was designed, as well as the population with which it was implemented.

**Treatment Modalities**

The National Institute on Drug Abuse (NIDA; 1999) actively funds the development and implementation of empirically supported therapies for adolescent substance abuse. NIDA’s partial listing of scientifically based approaches for adolescents include Behavioral Therapy, Multidimensional Family Therapy (MFT), and Multisystemic Therapy. These treatment modalities include components that may be particularly beneficial for adolescent populations. For instance, behavioral therapy (Azrin, et al., 2001; Azrin, Donohue, Besalel, Kogan, & Acierno, 1994) includes techniques such as behavior modification, through the incorporation of reinforcement theory (e.g., shaping,
rewards), modeling, role-playing, and self-monitoring. Specific interventions focus on impulsivity and reactivity, which may be more common among adolescent- than adult-substance abusers. Some of the interventions in the latter category include stimulus control, urge control, and social control.

Multidimensional Family Therapy (Liddle, et al., 2001) also incorporates components that address unique characteristics of adolescent substance use. It mobilizes multiple resources in adolescents’ environments (e.g., family members, school officials, and any other community members) considered important in the youth’s recovery. In addition, both youth and youth’s parents are empowered with skills needed to improve problematic situations. For instance, youth learn skills on decision-making, negotiation, communication, problem solving, and career planning. Parents learn to examine their parenting styles and to influence their children in a positive manner.

Multisystemic Therapy (Henggeler, Schoenwald, Bourduin, Rowland, & Cunningham, 1998) is somewhat similar to MFT in its simultaneous focus on several aspects of the adolescents’ substance use problem. For instance, Multisystemic Therapy concentrates on the adolescent’s and the family’s characteristics, as well as the adolescent environment (i.e., peers, school, neighborhood). Interventions include components from various other modalities, such as strategic Family Therapy, Structural Family Therapy, Behavioral Parent Training, and Cognitive Behavior Therapies.

Few treatment modalities, including some of those in NIDA’s list, meet Chambless and Hollon’s (1998) empirically supported therapies criteria described above. However, adolescent substance abuse is still a growing area of research, with an increasing number of treatment modalities in development. Thus, the evaluation of treatment effectiveness is
still in an early stage. Consequently, many of the adolescent substance abuse treatments have been developed after traditional adult treatment modalities. Although some of these treatments have not been evaluated in the ideal setting described by Chambless and Hollon (1998), they are, nevertheless, among the most commonly used at the present time.

One such model of treatment is the Minnesota Model (Wheeler & Malmquist, 1987). This is most predominately used in substance abuse treatment facilities for adolescents (Bukstein, 1994). Although it has been traditionally a 28-day residential program, length of stay is modified depending on the severity of the problem. The goal of treatment is abstinence, and substance abuse is viewed as a disease. Thus, addressing substance abuse symptoms takes precedence over treating symptoms related to other disorders. Often, a counselor who successfully overcame a substance disorder provides treatment. The overall emphasis of treatment is on helping the adolescent develop a new life style. Some of the treatment components include individual psychotherapy, group therapy, self-help activities, attending Alcoholics Anonymous (AA) meetings, 12-step principles, and family involvement. Aftercare involves continuing attendance to AA meetings, identifying a mentor, and helping others by sharing successes in overcoming substance dependence (Winters, et al., 1999).

A similar adult-based approach to adolescent substance abuse treatment is the Therapeutic Community (TC; De Leon & Deitch, 1985). However, in contrast to the Minnesota Model, TCs tend to provide treatment in a highly structured, residential-based program for a period between 6 and 15 months. Length of stay varies according to clients' progress. Substance abuse is viewed as the manifestation of personality
development disruption. Consequently, the goal in treatment is to help the adolescent live a drug-free lifestyle by learning to incorporate changes for proper behavior, expression of emotions, and decision-making. This goal is accomplished by having the adolescent become a member of the therapeutic community, function as a responsible citizen within this community, and develop healthy relationships with other members of the community. Thus, adolescents are required to perform the duties required to administrate and operate the residential facility. In addition, adolescents are provided with individual counseling, educational tutoring and formal classes, job-related skills training, and education programs for family members.

Also adopted from adult treatment modalities, Cognitive-Behavioral Therapy (CBT; Hawkins, Catalano, & Miller, 1992) is often implemented in the treatment of adolescent substance abuse. This is particularly the case when maladaptive thoughts and behaviors are identified as key contributors to initiation and maintenance of substance use. Under this approach, substance abuse is viewed as the result of faulty beliefs and attitudes, which can be modified to activate behavior change. Thus, one of the first steps in implementing CBT is to examine thoughts and beliefs that underlie the substance abusing behaviors. This step is typically followed by an analysis of the abilities and skills possessed by the adolescent to protect against relapse. Subsequent interventions would include modeling, vignette analysis, and homework assignments, as well as other activities designed to promote academic achievement.
Ethnicity/Race-Related Issues in Substance Abuse Treatment

Prior to the 1980's, few studies and prevalence surveys included the examination of race/ethnic cultural factors in substance abuse research. Indeed, the first national survey to emphasize issues pertaining to African Americans and Hispanics did not occur until 1984. Since then, there have been significant improvements in the quality of epidemiological research in this area (Caetano, Clark, & Tam, 1998). However, gaps in the literature still remain regarding the examination of differences observed on prevalence and use patterns of substances between individuals of ethnic backgrounds and non-ethnic backgrounds. Examination of these factors may be important, as they may reveal further differences in manifestation of consequences and response to treatment. Indeed, there is an extensive degree of heterogeneity that exists between, and within, ethnic groups (e.g., Asian Americans versus Hispanic Americans; Mexican Americans versus Cuban Americans), as reviewed below. Other challenges in this area of research are related to sampling methods. Some ethnically diverse individuals tend to cluster in regions within close proximity, but others are spread out throughout the country. Thus, it may be costly, and time consuming, to implement adequate sampling procedures that permit data collection from samples that are truly representative of the nation’s ethnically diverse population. Nevertheless, possible solutions to this challenge have been proposed. Caetano and colleagues (1994), for example, have suggested that researchers select areas with large concentrations of racially/ethnically diverse individuals and/or focus on a single subgroup at a time. However, research implementing these proposed solutions has
been scarce. Given these challenges, it is difficult to determine the extent to which these methodologies generalize to ethnic populations.

This section includes epidemiological data to provide further understanding about differences in the substance use prevalence rates and use patterns, and cultural-related factors in substance use among the following major ethnic/racial groups: Hispanic Americans, African Americans, Asian Americans and Pacific Islanders, and Native Americans and Alaska Natives. In this paper, the term culture refers to the set of values, beliefs, and practices of members of ethnic groups that serve as an inner cognitive map to guide individuals' perceptual and motivational dispositions (Frisby, 1999; Lopez & Guarnaccia, 2000).

Hispanic/Latino Population

Epidemiological Data

Hispanic American youth lifetime and current substance use prevalence rates tend to be very similar to, but in some cases higher than, those reported by Caucasian youth. As shown in Table 2, alcohol is the most commonly used substance among Hispanic American youth, followed by marijuana. In comparison to Caucasian youth, Hispanic American youth tend to report slightly higher lifetime use rates for both substances. Similarly, lifetime and current use prevalence rates for other substances are relatively equal between Hispanic and Caucasian youth, but in some cases Hispanic youth report higher rates. For instance, both lifetime and current cocaine use prevalence rates are estimated to be much higher for Hispanic youth than for Caucasian youth (see Table 2). Lifetime inhalant use rate for Hispanic American youth is also high, but slightly lower than rates for Caucasian youth, whereas current inhalant use is slightly higher for
Hispanic youth than for Caucasian youth. Finally, Hispanic American youth report lower lifetime methamphetamine use rates than Caucasian youth, but similar lifetime heroine use rates.

Table 2   Hispanic American Youth Substance Abuse Prevalence

<table>
<thead>
<tr>
<th></th>
<th>Alcohol</th>
<th>Marijuana</th>
<th>Inhalants</th>
<th>Cocaine</th>
<th>Methamphetamines</th>
<th>Heroin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifetime</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>80.8%</td>
<td>44.7%</td>
<td>15.2%</td>
<td>14.7%</td>
<td>9.1%</td>
<td>3.1%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>80.1%</td>
<td>42.8%</td>
<td>16.3%</td>
<td>9.9%</td>
<td>11.4%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Current</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Hispanic</td>
<td>49.2%</td>
<td>24.6%</td>
<td>5.5%</td>
<td>7.1%</td>
<td>Not specified</td>
<td>Not</td>
</tr>
<tr>
<td>Caucasian</td>
<td>50.4%</td>
<td>24.4%</td>
<td>4.9%</td>
<td>4.2%</td>
<td>specified</td>
<td></td>
</tr>
</tbody>
</table>

Note: CDCP (2002): Reports from school-based survey with youth in grades 9th through 12th (Caucasian youth N = 9,181; Hispanic youth N = 1,619)

Ethnicity/Race-Related Factors and Substance Use Patterns among Hispanics/Latinos

The substance use prevalence rates presented above may be related to patterns of substance use for this population. For instance, a greater percentage of Hispanic youth (12.9%) report trying marijuana prior to age 13 years than Caucasian youth (9.5%). Similarly, high alcohol lifetime and current use rates were consistent with the finding that a greater percentage of Hispanic youth reported having drunk alcohol before age 13 years (33.7%), as compared to the percentage of Caucasian youth (28.4%). Although,
Caucasian youth reported higher rates of episodic heavy drinking (34%) than Hispanic youth (30.1%), this rate is nevertheless high (CDCP, 2002).

For Hispanic Americans, patterns of substance use also vary according to ethnic subgroup. For instance, compared to other Hispanic/Latino subgroups, Puerto Rican youth ages 12 through 17 years had the highest lifetime and current marijuana use rates (22.1%, 8.4%, correspondingly), whereas youth of Central American descent reported the lowest rates (17.5%, 6.6%, correspondingly; SAMHSA, 2002). For alcohol, Cuban youth reported the highest lifetime and current use rates (54.5%, 26.9%, accordingly), while Puerto Rican youth reported the lowest rates (47.9%, 22.8%, respectively). Interestingly, current alcohol use rates for heavy drinking were very similar across several Hispanic American youth subgroups (i.e., Mexican American, Puerto Rican, Central or South American, and Cuban; SAMHSA, 2000; 2001).

Other ethnicity-related factors, such as place of birth and acculturation, have been found to influence the substance use patterns of Hispanic Americans. For instance, Gil, Wagner, and Vega’s (2000) 3-year longitudinal examination of alcohol use patterns with 1,051 immigrant and 968 U.S. born Latino students found higher lifetime prevalence rates for U.S. born students than for immigrant students. In addition, among immigrant students, there was a positive relationship between years of living in the U.S. and alcohol use. Accordingly, the prevalence rates of students whose length of residence in the U.S. was between 8 and 12 years closely paralleled those of U.S. born students. Similar patterns were also found for current alcohol use. Possible explanations for these findings included having easier access and greater exposure to alcohol in the U.S. and
deterioration of traditional values typically held by recent immigrants, which may otherwise serve as protective factors.

In addition to ethnicity, acculturation has also been found to account for variations in substance use patterns, although findings have been mixed. Acculturation has been defined as the individual's level of integration into the culture of the majority group and the level of retention of his or her traditional customs and values (Lessenger, 1997). Generally, an individual is considered highly acculturated when he/she adopts the customs and values of the mainstream culture. Alternatively, having a low degree of acculturation generally refers to retention of the customs and values of the individual's native culture. Mixed findings may be due, in part, to variations in measures of acculturation across studies. One method has been to measure variables such as language preference (i.e., language spoken with family members and friends versus peers), generational status, and length of residency in the U.S. (De La Rosa, 2002). For instance, Epstein, Botvin, and Tracy (2000) examined the impact of linguistic acculturation (i.e., language spoken with friends and parents) on the alcohol use of Hispanic adolescents in the 6th and 7th grades. They reported higher substance use among students who spoke both English and Spanish with friends and parents. The researchers concluded that substance use was negatively related to acculturation (i.e., the lower the degree of acculturation, the higher the alcohol use) given that bilingual students were considered to be less acculturated than those who preferred to speak English only. However, this method of measuring acculturation reflects a unilinear model, in which bilingualism would reflect a low level of acculturation. Thus, in unilinear models of acculturation, degree of adaptation to the host culture is equated with assimilation. In turn, retention of
native language (i.e., bilingualism) is associated with low levels of adaptation to the host
culture. More recent and sophisticated acculturation models consider bilingualism to be
indicative of high levels of acculturation to both native and host cultures (Kim & Abreu,
2001), which reflects a bilinear model of acculturation. That is, acculturation is placed on
two separate continuums, one for each culture. From the latter model’s perspective,
Epstein and colleagues’ (2000) findings above would indicate a positive relation between
acculturation and alcohol consumption (i.e., the lower the degree of acculturation, the
lower the alcohol consumption).

Other findings suggest variations in substance use related to acculturation within
Hispanic subgroups. For instance, SAMHSA’s (2000) finding that Cuban youth tend to
report higher alcohol use may vary when examined in association with acculturation.
Accordingly, when acculturation level is considered, less acculturated Cuban Americans
tend to report drinking patterns parallel to those of Mexican Americans and Puerto Rican
Americans with similar socioeconomic characteristics (Randolph, Stroup-Benham, Black,
& Markides, 1998). This finding also underscores the importance of incorporating
cultural components in treatment. Some studies have reported higher levels of heavy
drinking among less acculturated middle-aged Mexican American males, whereas other
findings reported frequent, heavy drinking among more acculturated younger Hispanic
American males (Randolph et al., 1998). In addition, Black and Markides (1993),
propose that acculturation and gender interact to create other substance use patterns in
this population. This was evident in their study with Cuban American, Mexican
American, and Puerto Rican women in which their substance use patterns tended to
mirror those of the general population as their level of acculturation increased.
Additional substance use patterns have been observed in relation to age. For instance, within group variations have been found on abstinence rates among Hispanic Americans of various age groups, with those in age groups 45 to 74 reporting highest abstinence rates across subgroups. In contrast, the highest alcohol consumption rates were reported by Mexican Americans ages 25 to 34 (Randolph, et al., 1998).

Consistent with the similarities in substance use prevalence rates between Hispanic American and Caucasian youth, members of these populations also share similarities in overall substance use risk factors. More specifically, Vega and colleagues (1993) found these similarities in their study with Caucasian and Hispanic boys in sixth and seventh grades in the following risk factors: parent smoking (32%), suicide attempts (6.9%), perception of peer approval for substance use (9%), delinquent behavior (18%), perception of high peer substance use (i.e., Hispanic youth 22%, Caucasian youth 21.6%), and for willingness to engage in non-normative behavior (i.e., Hispanic youth 16.4%, Caucasian youth 15.1%). Across many risk factors, Cuban American youth had lower overall rates than those of other Hispanic subgroups. These included low family pride (i.e., Cuban American youth had higher family pride rates than other Hispanic subgroups youth), family substance use problems, low self-esteem, depression symptoms, and suicide attempts.

The similarities in risk factor rates between Caucasian and Hispanic youth were further supported by Flannery, Vazsonyi, Torquati, and Fridrich’s (1994) study with 1,170 sixth and seventh graders. They found significant differences in prevalence rates for two of eleven risk factors assessed, with Hispanic youth reporting a tendency to obtain lower school grades and lower levels of school adjustment. No significant
differences were found in drug use, aggression, depression, impulsivity, self-efficacy, peer pressure, peer substance use, parental monitoring, or parent-child involvement.

Of the cultural factors thought to contribute to alcohol abuse in Hispanic males, the concept of “exaggerated machismo” has been associated with patterns of heavy drinking. Although this concept has not been examined extensively, it is thought that Hispanic males may tend to drink heavily in an effort to demonstrate their masculinity. Caetano and colleagues (1998) highlighted conflicting findings regarding this concept, with one survey reporting a higher percentage (16%) of Hispanic males endorsing the item “a real man can hold his liquor” than Caucasian males (13%), and another survey reporting that machismo was associated with gender (i.e., more predominant among males) than with ethnicity.

In summation, the similarities in substance use prevalence and risk factor rates between Hispanic American and Caucasian youth may, at first, obscure the need to modify the direction and methodologies of substance use research to serve the unique needs of Hispanic American adolescents. However, the need to further examine how to best formulate future substance use research with this population is underscored by several factors. For instance, although substance use prevalence rates for Hispanic American youth are similar to those of Caucasian youth, this trend has undergone drastic changes during the past decade. Historically, Hispanic American youth have experienced significantly lower substance use rates than those rates experienced by Caucasian and African American youth, with the lowest marijuana and cocaine use and heavy drinking rates observed during the early 1990’s (De La Rosa, 2002). Since then, Hispanic American youth use rates for these substances have sharply and rapidly increased to
mirror, and in some cases surpass, use rates of Caucasian youth (De La Rosa, 2002). These increasing trends strongly emphasize the need to identify contributing, as well as protective, factors, and explore how these factors may be incorporated into prevention and treatment outcome research. Furthermore, differing trends in substance use may be related to variations in substance use patterns, such as those mentioned earlier (i.e., earlier initiation of alcohol and marijuana, subgroup variations in substance use). These distinct substance use patterns have not been considered in the development of empirically supported treatments, although some of the findings reviewed above (i.e., moderating effects of acculturation on substance use) seem to suggest that ethnocultural factors may play an important role in substance use. Therefore, examination of factors that may contribute to escalating substance use rates, as well as of ethnocultural elements that may impact treatment, is warranted with this population.

**African American Youth**

**Epidemiological Data**

According to reports from the CDCP (2002) survey of students in grades 9th through 12th, substance use prevalence rates for African American youth were lower across substances than the rates reported by Caucasian youth (see Table 3 below). Alcohol was the most used substance among African American youth, followed by marijuana and inhalants. The lowest use rates were found in heroin, cocaine, and methamphetamines, accordingly. For some substances (i.e., marijuana use and heavy drinking of alcohol), prevalence rates have continuously decreased throughout the last few decades, with the lowest use rates observed during the early 1990’s. However, during the past few years, prevalence rates of marijuana use have stabilized. In contrast, trends of heavy drinking
reflect unpredictable patterns that increase and decrease within three to four year spans, with the last period suggesting an upward trend (De La Rosa, 2002).

Table 3  
African American Youth Substance Abuse Prevalence

<table>
<thead>
<tr>
<th></th>
<th>Alcohol</th>
<th>Marijuana</th>
<th>Inhalants</th>
<th>Cocaine</th>
<th>Methamphetamines</th>
<th>Heroin</th>
</tr>
</thead>
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<tr>
<td><strong>Lifetime</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>African Am.</td>
<td>69.1%</td>
<td>40.2%</td>
<td>5.8%</td>
<td>2.1%</td>
<td>2.1%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>80.1%</td>
<td>42.8%</td>
<td>16.3%</td>
<td>9.9%</td>
<td>11.4%</td>
<td>3.3%</td>
</tr>
<tr>
<td><strong>Current</strong></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>African Am.</td>
<td>32.7%</td>
<td>21.8%</td>
<td>2.6%</td>
<td>1.3%</td>
<td>Not specified</td>
<td>Not</td>
</tr>
<tr>
<td>Caucasian</td>
<td>50.4%</td>
<td>24.4%</td>
<td>4.9%</td>
<td>4.2%</td>
<td>Specified</td>
<td></td>
</tr>
</tbody>
</table>

Note: CDCP (2002): Reports from school-based survey with youth in grades 9th through 12th (Caucasian youth N = 9,181; African American youth N = 1,632)

Ethnicity/Race-Related Factors and Substance Use Patterns among African Americans

Although African American youth report lower substance use rates than their Caucasian counterparts, similarities between the patterns of use have been observed between these two populations (CDCP, 2002). In some cases, patterns vary and more severe patterns are observed among African American youth. For instance, a higher percentage of African American youth are introduced to marijuana at a younger age than Caucasian youth. Indeed 11% of African American adolescents reported trying marijuana.
before age 13 and 9.5% of Caucasian youth reported the same behavior. The percentage of African American youth initiating alcohol use before age 13 is roughly the same as that reported by Caucasian youth. Rates of heavy drinking (i.e., consumption of five or more drinks during one drinking episode on five or more days within the past month) are also high among African American youth (11%), though not as high as the rate reported by Caucasian youth (34%). Nevertheless, African American youth tend to engage in these behaviors in settings where they may be more likely to get in trouble with school officials. For example, 5% drank alcohol and 6% used marijuana on school property, whereas their Caucasian counterparts reported lower rates of engaging on the same behaviors (4% and 5%, respectively; Caetano & Clark, 1998). In addition, Grant (1997) found that African Americans tend to report more negative drinking-related consequences (e.g., financial hardship, health problems, problems with the law) and higher alcohol dependence rates than Caucasians, despite higher rates of abstention among the former population. Indeed, alcohol-related mortality rates (e.g., illness, injury) are higher among African Americans than their Caucasian counterparts (Jones-Webb, 1998).

Additional data regarding substance use patterns specific to African American youth are scarce. Consequently, more is known about differences in substance use patterns for the combined African American population of adults and adolescents. For instance, some demographic factors, such as age and socioeconomic status (SES), have been associated with heavy drinking among African American adults. This was the case in Herd’s (1990) examination of alcohol drinking patterns of 723 African American and 743 adult Caucasian males, where heavier drinking tended to be associated with younger age and higher SES for Caucasian populations, whereas for African American populations
heavier drinking tended to be associated with low income and older age. Other studies have also found African American substance use patterns to vary according to age. For instance, prior to 1995, drinking consumption rates for African Americans were highest for males ages 40 to 50 years, whereas rates were highest for Caucasian males in their 20s. Since then, alcohol consumption rates have become similar for individuals in all of those age groups for both African Americans and Caucasians, mostly due to reduction in consumption rates among Caucasians. However, differences in consumption rates remain between African Americans and Caucasians ages 50 to 59, with African Americans experiencing lower rates (3%) than Caucasians (16%). Changes have also been observed in African Americans’ attitudes toward drinking, which have become, in many cases, more conservative than in other populations. These latter findings point to the absence of research examining mechanisms and factors contributing to high rates of abstention, as well as dispelling prior stereotypes regarding African American drinking patterns (Caetano, et al., 1998).

Another factor thought to influence substance use patterns in African American populations is related to spirituality. For instance, in a sample of 654 African American and 474 Caucasian adult women, a positive relation between church attendance and abstinence rates was found only for African American women. In addition, socioeconomic status (SES) in the African American group was negatively related to abstinence rates. Religious African American women with low SES tended to exhibit lower rates of substance use than their Caucasian counterparts (Darrow, Russell, Cooper, Mudar, & Frone, 1992), which may suggest that spirituality serves as a protective factor against substance use for some segments of the African American female population.
Indeed, spirituality has been found to be an intrinsic philosophy among members of various ethnic groups that influences various aspects of life, such as religious, social, and political views (Hall, 2001).

Risk factors for members of ethnic groups, particularly African Americans, are also related to environmental conditions, including stress, discrimination, and other social and economic factors. In examining the relation between stress and alcohol drinking patterns among 655 African American and 661 Caucasian adults, stress and coping styles were found to be associated with differences in patterns of substance use between the two populations (Cooper, Russell, Skinner, Frone, & Mudar, 1992). They found substance use and drinking problems were more salient among African Americans with high-avoidance coping styles. However, this pattern was not found among Caucasian individuals with the same coping style. In addition, Cooper and colleagues (1992) also found that certain stressful life events (i.e., stressors related to work, love and marriage, children, finances, health and illness, criminal and legal matters, school) strongly influenced drinking problems among African American individuals, but not among Caucasian individuals.

Relevant to discrimination, a longitudinal study (McCord & Ensminger, 1997) with a large sample of African Americans (N = 953) found that the experience of discrimination predicted alcoholism in males, but not females (i.e., discrimination predicted depression for females). Having been exposed to discrimination was defined as individuals’ perceptions about encountering difficulties obtaining jobs, housing, “walking somewhere or going for entertainment” (p.342), and/or difficulties with school teachers or police due to their ethnicity. Based on this definition, more males (80%) than females (58%) reported having experienced discrimination.
Dembo and colleagues' (1998) study with almost 4,000 youth in a juvenile truancy detention center, of which slightly over 1,800 were African American, found that the living circumstances of African American adolescents tended to be more impacted by low socioeconomic conditions, as compared to their Caucasian counterparts, which increased their risk of drug use, involvement in illegal activities, and drug-related arrests. These findings were consistent with the results of Shillington and Clapp's (2003) study with a similar population, which indicated that African American youth were referred to substance abuse treatment by criminal justice agencies at higher rates than Caucasian youth. In addition, these researchers also found that reports of substance abuse-related legal involvement were much higher for African American youth, as compared to Caucasian youth.

A panel of experts from CSAT (2001) and SAMHSA (2001) reviewed the literature on protective and risk factors for the development of substance abuse among African American youth. The study of protective factors is very important as these factors may help reduce the effects of risk factors. According to SAMHSA's (2001) report, there is a tendency in the research on African American youth substance use to focus more on risk factors. But, the limited information that is available on protective factors suggests that for African American youth these factors include support from immediate and extended family members, spirituality and religion, social support through community involvement, and resiliency. In contrast, some of the identified risk factors that may increase the likelihood of engaging in substance use included low self-esteem, history of family alcohol and/or drug abuse, peer pressure, involvement in delinquent behavior, and low family pride. Indeed, Vega, Zimmerman, Warheit, Apospori, and Gil's (1993)
longitudinal study with 6,760 African American, Hispanic, Cuban, and Caucasian boys expanded the knowledge about the impact of these factors. He found African American boys were at higher risk than were boys from other ethnic groups in the overall combined sample on the following factors: low family pride (16.8% vs. 13.9%), reports of family substance use problems (20.1% vs. 18.4%), low self-esteem (20.9% vs. 18.2%), depression symptoms (19.5% vs. 14.7%), suicide attempts (7.6% vs. 6.9%), perception of peer approval for substance use (12% vs. 9.6%), and, the highest, delinquent behavior (25.8% vs. 18.9%).

As in the case of Hispanic Americans, there is some evidence that acculturation may play an important role in the substance use of African Americans (De La Rosa, Vega, & Radisch, 2000; Klonoff & Landrine, 1999). However, research in this area is virtually nonexistent. Some (Landrine & Klonoff, 1995) have attributed this gap in the literature to the view of African Americans as a racial group, instead of an ethnic cultural group. Nevertheless, studies on the role of acculturation in substance use with African American adults are starting to emerge. For instance, Klonoff and Landrine's (1999) study with over 500 African American adults examined the relation between acculturation level and alcohol consumption. They found a positive relation between retention of African American traditional values and beliefs and rates of abstention. In addition, they found abstention was not associated with SES variables, such as education and income levels.

In summary, the finding that African American youth report lower substance use rates than their Caucasian counterparts does not diminish the severity of the problem. As indicated above, prevalence rates for some substances have remained stable, and rates of heavy drinking may be on the rise. Stability of substance use rates may suggest that
African American youth are at higher risk of developing problem behaviors (Caetano & Clark, 1998). In addition, current prevention and treatment approaches may not be optimal to address the problem in the long-term, particularly given the finding that African American youth tend to stay in treatment for smaller periods of time and have higher rates of unsatisfactory release than Caucasian youth (Shillington & Clapp, 2003). This notion is also consistent with African American youth's high rates of early substance use initiation, higher tendency to use substances at school, and higher likelihood of experiencing negative consequences related to drinking alcohol. These patterns in substance use underline the need to identify factors that contribute to maintain substance use rates constant, as well as elements that contribute to abstinence. As mentioned earlier, some of these factors have already been identified (i.e., family orientation, spirituality and religion, community social support, and traditional cultural immersion), but they have yet to be incorporated into empirically supported treatment research with African American youth. The evaluation of treatment modalities that incorporate these factors is greatly needed, as they may have an impact on how African American youth respond to substance use treatment.

Asian American/Pacific Islander Populations

Epidemiological Data

Estimation of substance use prevalence rates among individuals from Asian American and Pacific Islander ethnic backgrounds has been difficult for several reasons. A major challenge is the heterogeneity found within the various ethnicities included under this category (CSAT, 2001). Although this category includes individuals from 30 Asian nationalities and 21 countries in the Pacific Islands region (Hong & Domokos-Cheng
Ham, 2001), there has been a tendency in epidemiological studies to combine data from these diverse populations and present these data as representative of the overall population (CSAT, 2001). Thus, although most studies indicate considerably lower prevalence rates of substance use among Asian Americans and Pacific Islanders, as compared to other ethnic groups and the general population, the accuracy of these estimates is probably untenable.

Despite these challenges, some data on this population has been compiled through national surveys. SAMHSA (2000; 2001) reported data from 1,890 Asian American respondents. Of these respondents, 587 respondents were between the ages of 12 and 17 years. This report indicated a lifetime prevalence rate for alcohol use of 13.5% in 2000 and 19.7% in 2001, which is lower than those rates reported by youth from other ethnic groups. Similarly, reports of marijuana lifetime (8%) and current (2%) use were also lower than for other ethnic youth. However, data regarding Asian American use of other drugs and gender differences in prevalence rates were not specified.

In an attempt to present a more precise estimate, Price, Risk, Won, and Kungle (2002) combined data from several national surveys and presented prevalence rates divided by subgroups. They found similar lifetime alcohol use rates between Caucasian youth (58.1%) and some Asian American youth subgroups (i.e., Japanese Americans 56.4%; Filipino American 52.7%). Although youth from other Asian American subgroups reported lower rates (i.e., Korean Americans 48%, Chinese Americans 41.1%, and Vietnamese Americans 35.8%), these rates were considerably higher than those often observed when epidemiological reports include data from combined Asian American subgroups.
Similar findings were observed for lifetime use of marijuana. Price and colleagues (2002) found that youth in some Asian American ethnic subgroups tended to report higher lifetime marijuana use rates (i.e., Japanese Americans 31.6%, Filipinio Americans 28.6%) than did their Caucasian counterparts (25.9%). In contrast, youth in the following Asian American subgroups reported considerably lower marijuana lifetime use rates: Chinese Americans (19.1%), Korean Americans (11.1%), and Vietnamese Americans (4.7%). Lifetime cocaine use prevalence was similar across groups, with Caucasian, Japanese American, and Chinese American youth reporting rates between 3.3% and 3.7%. The highest rates were reported for Filipino American youth (4.7%), and no reports of lifetime cocaine use were indicated by Korean American and Vietnamese American youth. Similarly, lifetime inhalant use prevalence was in the same range for Caucasian (6.8%), Japanese American (6.4%), Chinese American (6.1%), and Korean American (5.5%) youth, while lower rates were reported by Filipino (3.6%) and Vietnamese youth (2.1%). These variations in substance use suggest that prevalence rates for Asian Americans reported in national surveys may inadvertently minimize the severity of this problem for segments of this population. However, analyzing data obtained from national surveys by subgroup is often a challenge given the large under representation of these populations in national surveys’ samples (SAMHSA). Indeed, Asian Americans and Pacific Islanders typically represent 3% of household surveys and 5% of school-based surveys respondents.
Ethnicity/Race-Related Factors and Substance Use Patterns among Asian Americans

Price et al's (2002) report also found some interesting ethnicity-related factors regarding substance use among members of Asian American populations. For instance, of all major Asian American subgroups for which epidemiological data was mentioned above, Vietnamese American youth seemed to have the lowest prevalence rates for alcohol and all other substances. Vietnamese American respondents also had distinct characteristics in comparison to other Asian American subgroups. For instance, they had the highest percentages of foreign-born individuals (79.9%), individuals who spoke their native language at home (92.5%), and recently immigrated individuals (76.9%). In addition, Vietnamese Americans had the youngest median age (25.2), the lowest education level (i.e., 68.5% high school graduates), and the lowest per capita income ($9,032). In contrast, Japanese American youth reported the highest prevalence rates for alcohol and other substances, which tended to mirror use rates reported by Caucasian youth. The overall Japanese American population of respondents in these surveys had the lowest percentages of foreign-born individuals (32.4%), individuals speaking their native language at home (42.8%), and immigrants arriving after 1975 (20%). Japanese Americans also had the highest median age (36.3), level of education (89.9% high school graduates), and per capita income ($19,373).

Although Pride and colleagues (2002) did not evaluate the relationship between acculturation, socioeconomic characteristics, and substance use prevalence with this sample, it appears as though some of these variables may be related to alcohol and...
substance use rates. Indeed, this relation has been found elsewhere. For instance, Makimoto's (1998) review of this literature found studies supporting that acculturation may account for differences in substance use patterns between Asian Americans and Caucasians. Some studies in his review indicated positive relationships between acculturation and levels of alcohol consumption among Asian American students. Thus, as Asian American students adopted the mainstream culture, they tended to also parallel the drinking patterns of the majority culture. More recent studies continue to support this positive relation between acculturation and substance use. For example, Hahm, Lahiff, and Guterman (2003) found that more acculturated (i.e., more adapted to mainstream culture) Asian American adolescents in a sample of 714 students in grades 7th through 12th were at higher risk of substance use than less acculturated (i.e., more adapted to traditional Asian culture) Asian American youth. Nevertheless, risk was higher for Asian American youth with weak family ties (i.e., low parental attachment), regardless of acculturation level. Kim, Zane, and Hong (2002) agreed with these findings when they proposed that strong family ties (e.g., good parent-child communication), serve as a protective factor against development of substance use in Asian American youth, despite differences in acculturation levels.

Other factors related to ethnicity that have been associated with low alcohol consumption rates among Asian Americans may include the deep-rooted philosophical beliefs valued in this culture. For instance, Taoism and Confucianism emphasize societal responsibility and harmonious balance between body and mind, which is in conflict with the consequences and effects of alcohol drinking. In addition, reports compiled from surveys may be underestimates of substance use, given Asian Americans’ strong

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traditional values of discouraging disclosure of behaviors that may be seen as shameful to the family. These same beliefs may discourage seeking treatment for substance use problems (Makimoto, 1998). Finally, the common tendency among many Asian Americans to experience negative physiological effects as a result of drinking alcohol may discourage excessive drinking among members of this culture (Caetano, Clark, & Tam, 1998). According to Caetano and colleagues’ (1998) review of the literature, many Asian Americans experience flushing of the face and torso as a result of drinking alcohol, which is also associated with other severe symptoms such as “nausea, dizziness, headache, fast heartbeat, and anxiety” (p. 236).

The information reviewed in this section suggests that relative to Hispanic Americans and African Americans, considerably less effort has been devoted to epidemiological and treatment outcome research on substance use with Asian American youth populations. This may be partly due to the erroneous belief that substance use is a less severe problem for this population than for other ethnic groups. This conclusion may have been guided by prevalence rates obtained from national surveys that tend to report combined rates from various Asian American subgroups. As noted above, examinations of substance use rates by subgroup revealed that some segments of the Asian American population report alcohol and drug use prevalence rates that are very similar, and in some cases higher, than those reported by the overall youth population. These higher prevalence rates have been found particularly among youth from subgroups that account for larger portions of these populations (i.e., Chinese, Japanese), who have been established in the United States for longer periods of time than members of other subgroups (e.g., Vietnamese Americans). This latter finding also suggests the possibility that certain cultural variables
may serve as protective factors against substance use. Furthermore, as mentioned above, several other ethnocultural factors have been found to be associated with substance use (i.e., acculturation level, family structure, traditional beliefs). However, the impact of these factors in substance use prevention and treatment has not been examined.

Native American Population

Thus far, substance use prevalence for Native Americans has not been assessed in a systematic manner, nor have national surveys gathered enough data to provide a reliable prevalence estimate for this population (Caetano, et al., 1998). Extant research is further limited in that studies have mostly focused on reservation areas. Although Native Americans living in these areas constitute a significant portion of the population, this method of research excludes data from the remaining two thirds who live elsewhere. In addition, research has over emphasized the problem of substance use, while neglecting to examine important protective factors present among the large group in this population who maintain abstinence and have productive lives. Also, a limiting culture-related factor in research is the extensive heterogeneity of Native Americans, which diversifies across 300 distinct tribes. Views and use of some substances, such as alcohol, are likely to vary according to region, cultural beliefs, and historical background. In addition to influencing prevalence rates, these factors also may influence drinking patterns and tolerance levels. Thus, it is difficult to estimate with accuracy the prevalence of substance use for Native Americans (Beauvais, 1998).

SAMHSA reported (2000; 2001) estimates of adolescent substance use prevalence rates for Native Americans and Alaska Natives based on the responses from 344 youth ages 12 to 17 years. The findings indicated that lifetime (49.6%) and current (20.7%)
prevalence rates for alcohol use among Native Americans were higher than those rates reported by youth from other major ethnic groups, Caucasian youth, and the overall general population of adolescents. Similarly, rates of marijuana use were also high. In fact, the lifetime marijuana use rate for Native American youth (42.3%) was more than double of that of Caucasian youth (20.8%). No data was specified for other substances for this population. However, CSAT’s (2001) review of epidemiological data from 1982 to 1998 confirmed that overall rates of alcohol and drug use have been historically high among Native Americans. Indeed, consistent with SAMHSA’s recent data, alcohol is the most abused substance. In addition, Native Americans reported initiating alcohol use and drug use at a much younger age, at higher rates, and in combination with more substances than their non-Native American counterparts. Inhalant use also begins at an early age, with 25% of youth reporting first trying this substance in 8th grade (CSAT, 2001).

Ethnicity/Race-Related Factors and Substance Use Patterns among Native Americans

Taking into consideration the limitations of most epidemiological studies conducted with Native Americans, Beauvais (1998) summarized the few studies that have been conducted with this population. He found prevalence of alcohol drinking ranged across studies from 30% to 84%. These high rates of alcohol consumption paralleled the higher risk for negative consequences related to alcohol that is experienced by Native Americans. For instance, as compared to the general population, alcohol-related death rate is 5.6 times higher, and alcohol-related illness (e.g., liver disease, cirrhosis) is 3.9 times higher for Native Americans. In addition, Native American youth have also shown
a greater tendency to drink heavier amounts of alcohol per incident than their non-Native American youth counterparts. Unlike other ethnic groups, the rates of alcohol use observed in Native American youth during the 1970's has not decreased, as these youth continue to report similar frequency of drinking. In addition, higher alcohol use has been reported by youth who live in reservations, attend boarding schools, and drop out of school. Like youth in other ethnic groups, Native American youth also tend to use multiple substances, such as alcohol, marijuana and cocaine (Beauvais, 1998).

Prevalence estimates have been found to also vary according to tribal geographical region. For instance, Hisnanick's (1992) examination of a data set from the Indian Health Service, with information from over 23,000 alcohol-related diagnosed individuals, found regional differences in diagnosis of alcohol abuse. This examination reflected larger numbers of cases diagnosed in northern area reservations than in southern area reservations. In addition, higher prevalence rates were seen among adult males than adult females, but no gender differences in use rates among adolescents were found.

Some of the ethnicity-related factors that account for high prevalence rates in alcohol use are evident in the population's historical background. With the loss of cultural identity that resulted from colonization and forced adaptation to European culture, several of the traditional beliefs and support systems that may have otherwise helped protect against alcohol abuse were removed. For instance, spirituality is viewed in Native American culture as essential to maintain sobriety by providing individual inner strength. Furthermore, spirituality is viewed as a force that fights evil. Rituals and ceremonies are seen as requirements to help the individual recover (Beauvais, 1998). Thus, it is possible
that the effect of these protective factors has been diminished with their discontinued practice due to Native Americans' adaptation to the mainstream culture.

Research on the understanding of substance use, as well as on development of prevention and treatment interventions, with Native Americans is lacking, despite high prevalence rates. Indeed, findings suggest that this population experiences the highest prevalence rates for the most commonly used substances (i.e., alcohol, marijuana) than any member of all subgroups encompassed in the general youth population. Some of the challenges that may contribute to this disparity in the research include the difficulties encountered in reaching members of this population in non-reservation settings. In addition, certain barriers that may discourage Native Americans' participation in epidemiological studies include variations in views regarding substance use across tribes and disclosure apprehensiveness. Consequently, Native Americans have been largely underrepresented in substance use epidemiological research. This population has been also underrepresented in substance use treatment outcome studies. Several factors contributing to the exclusion of Native Americans from these types of research may include viewing substance use treatments as not being designed to treat individuals from this culture specifically, lack of trust, and/or lack of access to treatment locations (CSAT, 2001). Nevertheless, the extent to which these factors impede the inclusion of Native Americans in substance use research has not been empirically examined. Therefore, substance use research with Native American populations is much needed.
Substance Abuse Treatment for Ethnically and Racially Diverse Populations

The ethnic populations described above possess unique characteristics, experience varying substance use prevalence rates and patterns, and have distinct sets of ethnicity-related factors that contribute to the development of substance abuse. For this reason, many in the field (e.g., Clay, Mordhorst, & Lehn, 2002; Bernal & Scharron-del-Rio, 2001; Hall, 2001; Sue, 1998) have called attention to the lack of consideration of these variables in treatment research. Furthermore, the validity of current empirically supported therapies (ESTs) with these populations has been questioned (Bernal & Scharron-del-Rio, 2001), not due to their effectiveness to treat the disorders for which they were developed, but for failing to incorporate variables that are thought to impact treatment outcome with ethnic populations (Clay, et al., 2002). In fact, Sue’s (1998) extensive evaluation of major reviews on treatment outcome research revealed there was “not a single rigorous study examining the efficacy of treatment for any ethnic minority population” (p. 441).

In the absence of ESTs for individuals of diverse ethnic backgrounds, the recommendation has been made to utilize instead the ESTs shown to be effective with the general population (Chambless, et al., 1996). Despite the notion that providing some treatment leads to a greater decrease of symptomatology than providing no treatment at all (Stanton & Shadish, 1997), Bernal and Schirron-del-Rio (1998) still raise the question of whether this view would remain unchanged if the use of treatments shown to be effective only with ethnic populations were advocated for the treatment of members of the general population. Indeed, he found no evidence in the current body of literature that treatments developed specifically with ethnic samples (e.g., Szapocznik, Kurtines, Foote,
Perez-Vidal, & Hervis, 1986; 1983) have been adopted in the treatment of members of the general population.

Some of the concerns mentioned above also have been raised in part due to the current design and methodology practiced in most of the available treatment research. Many of these practices, though some may be unintentional and challenging to modify (e.g., use of convenience samples, small ethnic samples), tend to not consider ethnicity-related variables that have been thought to be important in the treatment of individuals from ethnic backgrounds (e.g., spirituality, cultural identity, interdependence, discrimination), even though there is a growing body of literature emphasizing the need to do so (Hall, 2001). Although the effects of ethnicity-related factors in treatment outcome have not been examined specifically in connection with substance use, there are other areas of research in which these factors have been found to impact rates of service utilization, treatment choices, health beliefs (Bernal & Scharron-del-Rio, 2001), session attendance, and attrition rates (Sue, 1998), all of which may, in turn, impact treatment outcome.

Another reason for calling into question the validity of ESTs with ethnic populations is the tendency to assume that the practice of simply including members of ethnic groups implies generalizability to the overall ethnic population. This approach fails to recognize the distinct differences between, and within, these diverse groups that may result in differential response to treatment. This approach is further confounded by the practice of combining data from members of ethnic groups and subgroups in statistical analyses. Indeed, this procedure counters Chambless and Hollon’s (1998) caveats regarding internal and external validity, given that the inclusion of clients with different
characteristics in the various treatment conditions may result in unequal groups or conditions.

This concept can be exemplified as follows: random assignment increases likelihood of equivalence across groups on the selected variables of interest (e.g., ethnicity) and ensures the absence of systematic differences between conditions (Shadish, Cook, & Campbell, 2002). According to Shadish and colleagues (2002), implementing random sampling, before random assignment, is needed in order to ensure that the results are applicable also to those individuals in the population who were not represented in the sample. However, random sampling is not a common practice in treatment research. Particularly given the tendency to group members of different ethnic groups under one broad category, random assignment may not ensure proportional distribution of members of each ethnic group across treatment condition. Thus, the conditions may include various numbers of individuals from different ethnic groups whose substance use patterns, baseline rates, and treatment needs may differ. Although these differences may have occurred by chance, because of random assignment, they may unknowingly impact treatment outcome, particularly given that statistical analyses typically evaluate between group differences, not within group differences. Therefore, it is possible factors related to ethnicity may result in different responses to treatment among individuals of ethnic cultural backgrounds, but these differences may be obscured by the failure to recognize between and within group heterogeneity. External validity may be further challenged by the lack of specificity in describing the sample characteristics (e.g., ethnic group and subgroup identification, degree of acculturation), and making the erroneous assumption that race is equivalent to ethnicity (Hall, 2001).
Hall (2001) offers two strong arguments in favor of scientifically evaluating the effectiveness of ESTs with ethnic populations. First, this process may help determine the external validity of these approaches by establishing their effectiveness, or lack of effectiveness, with racially/ethnically diverse populations. At the present time, there is increasing evidence that ESTs can be effective in the treatment of some disorders. However, based on the criteria defined by APA's Division 12 Task Force (1995), there is no evidence demonstrating the extent to which ESTs effectiveness generalizes to ethnic groups. Second, Hall (2001) points to the rapid rate at which racially/ethnically diverse populations, and their need for mental health services, are growing.

Summary

There has been a move toward the use of ESTs to treat members of the general population. Although few ESTs have been developed for adolescent substance use treatment relative to those for other disorders and adult populations, this area of research is gradually growing. Indeed, several researchers have evaluated the effects of modified adult-based treatment models, as well as developed new modalities, to treat substance use in adolescents. However, these treatment approaches have not been evaluated in terms of ethnicity-related variables (e.g., acculturation, cultural beliefs). This evaluation is crucial to ensure that members of ethnically diverse populations are receiving adequate substance abuse treatment. As described above, members of ethnic groups experience differing rates of substance use and are susceptible to different risk and protective factors, which may result in differential responses to treatment. Furthermore, these variations in substance use patterns may underscore the importance of incorporating ethnicity-related
components into treatment. Therefore, the purpose of the present paper was to evaluate the extent to which adolescent substance use ESTs generalize to ethnically diverse populations. Accordingly, controlled treatment outcome studies with substance abusing adolescents were examined for their inclusion/consideration of factors related to ethnicity and based on the generalizability criteria defined by Chambless and colleagues (1998; 1996) and Sue (1998).
CHAPTER III

METHODOLOGY

Procedure

Search Method

Treatment outcome studies for adolescent substance use were obtained through several sources. First, treatment outcome review articles published in peer-reviewed journals were identified, and their reference sections were examined to locate other relevant studies. Computerized literature searches in PsycInfo were conducted utilizing the names of each author of the studies selected. Further computerized searches were performed with the authors’ names using the Cited Reference Search engine. Next, a PsycInfo search was performed utilizing a list of keywords specified in the abstracts of both review and treatment articles identified thus far. In addition, the reference sections of adolescent substance abuse review articles were examined to ensure all possible studies were identified. Finally, treatment outcome studies were also sought by searching the websites of the following substance abuse related organizations: National Institute on Drug Abuse (NIDA), Substance Abuse and Mental Health Services Administration (SAMHSA), Centers for Disease Control (CDC), and Center for Substance Abuse Treatment (CSAT).
Inclusion Criteria

The studies selected for this examination met the following criteria:

1. Published in peer-review journal or scholarly book.

2. Focused on substance abusing adolescent population (alcohol and/or illicit drug use) with maximum age of 21 years.

3. Utilized random assignment, which increases the likelihood of unbiased comparisons of treatment effects, and reduces potential threats to internal validity.

4. Specified pre- and post-treatment measures.

5. Substance use (i.e., alcohol, marijuana, hard drugs) was included as an outcome measure.

Search Reliability

One independent rater evaluated the pool of treatment outcome studies identified initially by the principal investigator to independently select studies that met the criteria specified above. When both the rater and the principal investigator concurred on whether each article did, or did not, meet the specified selection criteria, this was construed as an agreement. An inter-rater reliability coefficient was obtained for the studies identified by dividing the total number of agreements by the total number of disagreements and agreements and multiplying by 100. An inter-rater reliability coefficient of 89 percent was obtained for the 18 studies identified, suggesting that the search was reliable.
Content Analysis Regarding Ethnicity/Race

Related Variables and Generalizability

Articles that met the criteria specified above were examined to identify the extent to which they addressed factors of cultural relevance. These factors were derived through the review of the literature presented in Chapter II. Articles were coded for their consideration of the following culture-related variables:

1. Was ethnicity considered in any manner throughout the article? (yes/no).

2. Was ethnicity considered in the design of the study? (yes/no; i.e., yes - if ethnicity was considered prior to initiating study, such as utilizing block or stratified random assignment to increase likelihood of equivalence of ethnic participants across conditions, Were any components of the study modified due to ethnicity?, such as translation of measures or use of translators, was there inclusion of culture-related measures?, such as acculturation scales).

3. Were there considerations regarding validity or appropriateness of assessment instruments utilized in the study with regards to ethnicity? (yes/no).

4. Were the various ethnic groups represented within samples mentioned? (yes/no; if yes - was ethnic subgroup breakdown reported?). If ethnic breakdown was reported, was the percentage of ethnic participants representative of the overall population (yes/no; if yes - for which populations, e.g., African Americans).

5. Was ethnicity included in pre-treatment preliminary statistical analyses of between group differences to ensure equivalence across conditions? (yes/no).
6. Was sample of ethnic participants large enough to conduct statistical analyses regarding differential response to treatment or moderating effects of ethnicity? (yes/no; if yes - was such analysis performed?).

7. Was data presented regarding attrition rates and their impact on equivalence across conditions regarding ethnicity?

Reliability of Content Analysis

An independent rater evaluated selected studies and determined the extent to which the studies met the criteria listed above. As indicated, agreements meant that both the rater and the principal investigator concurred on whether each article addressed the seven variables mentioned in the specified criteria. An inter-rater reliability coefficient was calculated for the variables specified by dividing the total number of agreements by the total number of disagreements plus agreements and multiplying by 100. Inter-rater reliability was 92 percent, indicating high degree of concurrence between the raters about the extent to which the specified variables were addressed in each study.
CHAPTER IV

EXAMINATION OF STUDIES

The search method described above resulted in the identification of 18 adolescent substance abuse treatment outcome studies. These studies are described in Appendix I, which includes the studies' citations, as well as descriptions of the studies’ populations, substances targeted, assessments utilized, treatments implemented, overall outcomes, and consideration of ethnicity within the studies. A synthesis of the information included in Appendix I is provided in this section.

Number of Studies

One notable finding was the relatively small number of studies identified for review in this paper (N = 18), as compared to the literature on adult substance abuse treatment. However, there were noteworthy differences in the number of adolescent substance abuse treatment outcome studies published during the past three decades, with a significant increase in the number of studies during the past few years (i.e., 1980’s = 5 studies, 1990’s = 7 studies, 2000’s = 6 studies). Although prior reviews of adolescent substance abuse have identified a larger number of studies than were identified in this review (e.g., Williams, Chang, & Addiction Centre Adolescent Research Group Foothills Medical Centre, 2000), the focus of this review was specifically on controlled outcome studies.
that utilized random assignment to treatment conditions and assessed levels of substance use pre- and post-treatment. Thus, studies that lacked these components were excluded. Additionally, studies in which both adolescents and adults were included in their samples without reporting outcomes for each group separately were excluded (i.e., Azrin, et al., 1994b). Also excluded were follow-up studies in which no new subjects were added, given that culture-related variables were already addressed in the initial study (i.e., Kaminer & Burleson, 1999).

The small number of studies identified, relative to the number of studies on adult populations, seems plausible, given that the need for more studies with adolescent populations has been recommended by several researchers in the field (e.g., Shillington & Clapp, 2003; Williams, et al., 2000). Indeed, the number of adolescent substance abuse controlled treatment outcome studies has not varied significantly across the past three decades. However, due to the complex nature of high-quality treatment outcome studies, it seems understandable that significant increases in the number of studies conducted have not been observed. Nevertheless, with the increasing number of adolescents entering substance abuse treatment (HHS, 2003), research with substance abusing youth is urgently needed.

Treatment Characteristics

Treatment Settings

As presented in Appendix I, most of the studies (94%) took place in outpatient settings. One of these studies focused on both outpatient and inpatient populations, i.e., outcome comparison between outpatient and inpatient (Amini, Zilberg, Burke, &
Salasnek, 1982), and another study (Szapocznik, et al., 1986) did not specify the type of population targeted. The predominant emphasis on outpatient settings in the studies reviewed seems to mirror to a large extent the type of settings in which treatment is provided in the general population. As reported by HHS (2003), the number of individuals receiving outpatient services is three times as many as that of individuals in residential/inpatient settings.

With the exception of four studies, most studies reported the substances targeted for treatment. Marijuana was the most common substance targeted (i.e., targeted in all 14 studies that reported this information), hard drugs were the second most common (i.e., amphetamines, cocaine; reported in 10 of the studies), and alcohol was targeted in 50% of these studies. There were no instances in which hard drugs or alcohol was exclusively targeted. Treatment typically focused on reduction of marijuana by itself, or in combination with hard drugs or alcohol, or both.

Interestingly, hard drugs were more commonly targeted for treatment in controlled studies than alcohol consumption, even though national survey reports (e.g., SAMHSA, 2003; CDCP, 2002) have estimated youth’s consumption of alcohol to be at least ten times greater than their use of hard drugs. In most cases, the researchers predetermine the emphasis of treatment to be on a particular substance. For instance, the participant inclusion criteria in Waldron and colleagues’ (2001) study excluded youth who abused only alcohol or tobacco, and Azrin and colleagues (1994a) included participants who abused either drugs only or drugs in addition to alcohol. In general, researchers did not specify their motives to focus on drugs as opposed to alcohol (e.g., differences in severity of behavior problems associated with one or the other substance, differences in treatment
components required to treat the use of a particular substance, youth’s propensity to simultaneously abuse multiple drugs). However, funding sources may, to some extent, influence these decisions. Indeed the majority of studies were funded by NIDA, and only a few studies received financial support from other sources, such as the National Institute on Mental Health.

The greater emphasis of treatment research on certain substances may have implications for members of ethnic populations. For instance, given the differences in substance use prevalence rates across various ethnic/racial groups, limiting the substances targeted in treatment research may result in a lack of interest and/or need to participate among members of ethnic/racial groups, such as African American, whose substance use-related problems may be more associated with alcohol drinking and marijuana use than with hard drugs. The studies reviewed provided some support for this theory, as the two studies with significant African American representation (i.e., 74% in Henggeler, et al., 1991 FANS study; 50% in Henggeler, et al., 1991) focused on alcohol and marijuana, as well as hard drugs. Nevertheless, other factors, such as geographic location in which the study took place, could have influenced the sample composition as well. In fact, there were several studies that focused on marijuana and alcohol (i.e., substances commonly abused across youth of diverse ethnic/racial background) in which the majority of participants were Caucasian.

Another factor influencing the focus of treatment research may be the referral sources utilized to recruit participants. Several of the studies reviewed relied, at least partially, on referrals from juvenile justice agencies and courts for participant recruitment. According to Shillington and Clapp’s (2003) study with a large group of youth mandated to
treatment (i.e., over half of 4,733 adolescents), marijuana was the predominant substance abused, followed by metamphetamine, and alcohol, which parallel the substances targeted in the studies. However, the same study found that Caucasian youth tended to report significantly higher use of metamphetamine, as compared to African American and Hispanic youth. Furthermore, Shillington and Clapp (2003) found that African American and Hispanic youth were significantly more likely than Caucasian youth to be referred, or mandated, to seek substance abuse treatment. The higher proportion of ethnic youth referred, and mandated, to treatment, as compared to Caucasian youth, should result in a larger subject pool of diverse youth from which to recruit participants for treatment studies. Nevertheless, a smaller proportion of ethnically/racially diverse youth would meet the inclusion criteria of studies in which the primary focus is mostly on alcohol and certain drugs.

**Studies’ Sample Sizes**

Sample sizes ranged from 26 to 200 participants, with approximately 40% of the studies having sample sizes of over 100 participants. The participants’ ages across studies ranged from 14 to 18 years old, with a mean age across studies of 15.8 years (SD = .88). With the exception of three studies, all studies reported the gender of the participants. Representation of males in the samples of those studies ranged from 60% to 82%. The age and gender characteristics of the samples across studies are also consisted with those reported in national surveys (e.g., SAMHSA, 2003; CDCP, 2002) and other studies that have reported this information for large samples of adolescents (e.g., Shillington & Chapp, 2003).
Reporting of Participants' Ethnicity

Most of the studies (89%) reported the ethnicity of the participants to some extent. Approximately a third of those studies provided detailed descriptions of the participants' ethnicity (i.e., every participant's ethnicity was accounted for), while the remainder two-thirds of those studies reported partial descriptions of the participants' ethnicity (i.e., one study identified participants' ethnicity by surname (Amini, et al., 1982), seven studies reported the ethnicity of some participants as "other," two studies reported the participants' ethnicity as a combined percentage of various groups (e.g., 10% Native Americans, Asians, and other), three studies reported only the percentage of Caucasian participants represented). Therefore, in the majority of studies, the participants' characteristics were not reported with the degree of specificity that would qualify them as ESTs, according to Chambless and Hollon's (1998) criteria. Additionally, this trend in the reporting of ethnicity has not reflected significant changes over time. However, the practice of reporting limited information regarding ethnicity is common in psychological research. Indeed, Chambless and colleagues' (1996) examination of possible ESTs for some disorders (i.e., anxiety and stress, depression, health problems, some childhood problems, marital discord, sexual dysfunction) found that most studies did not describe the ethnicity of the participants. In addition, researchers in areas other than substance abuse (i.e., pediatric psychology) have also brought up attention to the limited information provided in studies about participants' descriptions (Clay, et al., 2002). Nevertheless, the extent to which participants' ethnicity was reported in adolescent substance abuse treatment studies was much greater (89%) than Clay and colleagues' (2002) found in other areas (i.e., pediatric psychology; 27%). The greater degree of
specificity regarding participants' ethnicity in substance abuse treatment research may also be related to the finding that most studies were funded by government agencies (e.g., NIDA, NIH) that often require specification of sample characteristics.

Of the studies that reported ethnicity to some extent, Caucasian youth were represented in 75% of them. Caucasian youth comprised between 26% and 90% of the samples, with most of these studies (67%) reporting that Caucasian participants represented over 70% of the sample.

The second largest group represented across studies was Hispanic/Latino. Sixty-three percent of the studies that reported participants’ ethnicity included youth from Hispanic/Latino backgrounds. However, it was not possible to determine the exact representation of Hispanic/Latino participants in two of these studies. In one study, Spanish surname was utilized to identify participants’ (Amini, et al., 1982). Although Spanish surname was an acceptable method to identify individuals of Hispanic origin according to census bureau standards during the 1970’s, this method may not be as accurate as self-identification, given the large degree of intermixing (e.g., colonization, immigration, interracial marriage) between Hispanic/Latinos and individuals of other ethnicities (Freeman, Lewis, & Colon, 2002), which may result in Hispanic/Latinos having European surnames or individuals with Spanish surnames identifying with other ethnicities. The second study combined the number of Hispanic/Latino and African American participants (Azrin, et al., 1994a). In the studies that provided detailed sample descriptions, Hispanic/Latino youth were represented in 50% of the cases. Their representation ranged from 1% to 100%, with five of the eight studies ranging from 1% to 46% and four studies focusing exclusively on Hispanic/Latino youth. The latter studies
(Santisteban, et al., 2003; Szapocznik, et al., 1988; Szapocznik, et al., 1986; Szapocznik, et al., 1983) provided sample descriptions broken down by Hispanic/Latino subgroups (e.g., Mexican, Cuban). Across these four studies, Cuban youth comprised the majority of the samples (range = 51% to 82%). Hispanic/Latino was the only ethnic group for which studies were identified that focused exclusively on one ethnic group. Emphasis of treatment research on specific ethnic groups has been proposed as the form of research that permits the evaluation of treatment components that are particularly effective with the specific ethnic group (Bernal & Scharron-Del-Rio, 2001).

Thirty-eight percent of the studies reported inclusion of African American participants. Representation of African American youth across these studies ranged from 2% to 74%, with half of the studies reporting 16% or less African American representation. African American youth comprised the majority of the sample in two studies conducted by the same researchers (Henggeler, et al., 1999; 1991). As mentioned above, one study (Azrin, et al., 1994a) reported a combined number of African American and Hispanic/Latino participants. And, therefore, it was not possible to determine the exact representation of each group.

Compared to the other ethnic/racial groups mentioned above, Native Americans and Asian Americans were represented to a lesser extent across studies. Twenty-five percent of the studies that reported ethnicity included Native American participants (range = 1% to 10%), while 19% included Asian American participants (range = 1% to 6%). One study (Amini, et al., 1982) combined participants of Native American, Asian American, and "other ethnicity" into one group. In addition, due to the small number of Native American and/or Asian American participants in the samples, it is possible that these
youth may have been placed in an “other” category, without specifying that members of these ethnicities were represented within that category. Thus, it was not possible to determine the exact degree of representation for these groups in that study. Consequently, an evaluation of the external validity of the treatments evaluated for use in Native American and Asian American populations is not feasible. The small representation of individuals of these ethnicities is consistent with reports of underutilization of mental health services by some members of Native American and Asian American populations (CSAT, 2001).

Overall, the general tendency across studies was to report participants’ ethnicity according to the definitions established by some of the national funding agencies, such as the National Institute of Health (i.e., American Indian/Alaska Native, Asian/Pacific Islander, Black/African American, Hispanic), without specifying subgroups within each ethnic group. This approach does not acknowledge the within-group heterogeneity that exists within each of the ethnic groups mentioned above (Hall, 2001). The practice of reporting combined totals that include members of more than one ethnic group was also apparent, as was the tendency to create an “other” category that included those participants who did not fit within any of the listed ethnic groups. One notable study (Santisteban, et al., 2003) provided an extensive description of the participants’ ethnicity, detailing subgroups within a larger ethnic group (i.e., Hispanic). These findings partially supported the criticism that most studies do not provide sufficient details about the ethnicity of the participants that would provide important information about external validity (Clay, et al., 2002; Bernal & Scharron-del-Rio, 2001; Chambless & Hollon, 1998; Chambless, et al., 1996).
When considering that ethnically/racially diverse populations represent over 33% of the general population in the United States (Census Bureau, 2001), it appears that some members of racially/ethnically diverse youth (i.e., African Americans, Hispanics/Latinos) were represented in many of the samples across studies. That is, in some studies ethnic youth comprised more than 50% of the participants, and some studies focused specifically on ethnic youth (i.e., Hispanic/Latino youth). However, the representation of each ethnic group (i.e., Hispanic/Latino, African American, Asian American, Native American), in proportion to their individual degree of representation in the general population, varied across studies. For instance, both African American and Hispanic/Latino youth were proportionally represented in few studies, with the exception of, in the case of the latter population, those studies that focused exclusively on Hispanic/Latino populations. Nevertheless, African American and Hispanic/Latino youth had much greater representation than Native American and Asian American youth.

Some researchers (e.g., Bernal & Scharron-Del-Rio, 2001; Hall, 2001) have underscored the importance of considering treatment outcome separately for individuals of ethnically/racially diverse backgrounds, given their extensive heterogeneity in some variables (e.g., interdependence, discrimination, language (Hall, 2001)) that are thought to impact various aspects of treatment (e.g., treatment services utilization, treatment preferences, health beliefs (Bernal & Scharron-Del-Rio, 2001)). Thus, the importance of including the number of ethnic participants that would permit examination of ethnicity by treatment effects, independent of proportional representation, has been advocated (Bernal, Bonillo, & Bellido, 1995), particularly given the small sample sizes in many of the studies. In addition, Hall (2001) proposed that “simple inclusion [of ethnic
participants] is unlikely to yield much information on the cultural relevance of theories or interventions” (p. 504).

Outcome Measures

The majority of the studies reviewed incorporated outcome measures for various domains, including substance use, adolescents’ conduct problems, school performance, social functioning, and family relationships. In addition, a few studies included measures of other variables related to psychological functioning, such as depression, self-esteem, self-confidence, and temperament. Because the focus of this paper is on substance use, measures utilized to assess other functioning domains are not discussed. However, to provide a comprehensive overview of measures utilized in adolescent substance abuse treatment outcome studies, all instruments utilized in the studies are listed in Appendix I.

Relevant to substance use measures, a large portion of the studies (55%) utilized biological markers (i.e., urinalysis) in addition to self-report measures of substance use. Several studies (67%) obtained self-reports of substance use through questionnaires and/or subscales abstracted from scales for related areas (e.g., Social Functioning Scales, Minnesota Multiphasic Personality Inventory), while other studies (72%) utilized structured methods to obtain estimates of substance use (e.g., Time-Line Follow-Back, cited in Azrin, et al., 2001) and/or diagnostic-oriented instruments (e.g., Diagnostic Interview Schedule for Children cited in Kaminer, Burleson, & Goldberger, 2002). A few studies (22%) obtained collateral reports about the youth’s substance use from parents in addition to urinalysis and youth self-report.
The outcome measures in the studies were examined for the extent to which the researchers considered validity and appropriateness with regard to race/ethnicity. Of interest was whether there had been indications that the researchers acknowledged, (1) importance and/or relevance of utilizing culturally appropriate measures in studies that included ethnic participants, (2) mentioned psychometric properties of the instruments and their validity for use in ethnically/racially diverse populations, and (3) specified caveats on interpretation of findings when measures were not found culturally appropriate. There were not studies found that had addressed any of these three issues. However, three of the studies that focused exclusively on Hispanic/Latino youth (Santisteban, et al., 2003; Szapocznik, et al., 1986; Szapocznik, et al., 1983) indicated that the measures were translated to Spanish. Nevertheless, these researchers did not specify the manner in which translation procedures were conducted (i.e., if they followed transliteration and cross-cultural validation procedures recommended in the literature for assessment instruments (e.g., Butcher, 1996), which is important given that translation of instruments is not equated with cultural appropriateness. Unfortunately, results obtained from outcome measures were not reported separated by ethnic group in any study, which may have permitted some evaluation about the cross-cultural validity of the measures. The lack of consideration of the outcome measures cultural appropriateness that was evident in this group of studies is consistent with what has been apparent in other areas of psychological research (e.g., pediatric psychology). Indeed, this type of consideration with regards to ethnicity is rare in this field (Clay, et al., 2002).

While most of the studies reviewed did not meet Sue’s (1998) criterion for ESTs of incorporating multiple, culturally appropriate measures, it can be argued that some
measures of substance use may be inherently valid across cultures (e.g., biological markers). Nevertheless, cultural variables may affect the validity of some of the simplest forms of self-report measures of substance use. For instance, the utilization of response formats considered Western-style answering designs (e.g., true/false) may impact the respondents' behavior (Butcher & Pancheri, 1976). In addition, some studies have found that members of ethnic populations have a higher tendency to respond in more socially desirable ways than Caucasian respondents (Dahlstrom, Lachar, & Dahlstrom, 1986).

Lack of consideration of an instrument’s cultural suitability is an unfortunate oversight from part of the researchers; particularly given that culturally appropriate versions of some of the instruments used may be available from the tests developers for some ethnic populations. For instance, the Time Line Follow Back (Sobell, et al., 1992), which was employed in some of the studies, has been translated into Spanish. The Spanish version of the TLFB incorporates events and holidays pertinent to Hispanic/Latino culture to trigger recall of substance use on special occasions, which may be viewed as a step toward cultural relevance. Similarly, there is extensive literature on the development and validation of several versions of the MMPI-2 for use with various ethnic groups (Butcher, 1996).

In addition to omitting information about, and/or acknowledgment of the importance of, utilization of culturally appropriate measures, there was no mention in the studies about any limitations and/or caveats for interpretation related to the psychometric properties of the instruments.
Consideration of Race/Ethnicity in Treatment Research

With the exception of two studies (Kaminer et al., 2002; Kaminer, Burleson, Blitz, Sussman, & Rounsaville, 1998), most studies (89%) compared some form of family-oriented therapy to an individual-, group-, and/or psychoeducational-oriented treatment approach. Some of those studies also compared family-oriented therapies to treatment as usual conditions. The two studies that did not implement family-oriented approaches involved comparisons between Cognitive Behavior Therapy and psychoeducational and Interactional therapies. Additional details about the treatments employed in these studies are not provided in this paper, since they have been reviewed at great length in several outstanding reviews of adolescent substance abuse treatment (e.g., Deas & Thomas, 2001; Ozechowski & Liddle, 2000; William & Chang, 2000; Waldron, 1997; Liddle & Dakof, 1995).

The extent to which race/ethnicity was considered in treatment within any section of each article was examined (e.g., Introduction, study rationale, design, implementation, Results, Discussion). Of the 18 studies reviewed, one study included a segment within the Introduction section describing factors in substance use unique to Hispanic/Latino youth and underscored the need to evaluate existent empirically supported treatments with this population (Santisteban, et al., 2003). This study implemented treatment with a sample consisting of 100% Hispanic/Latino youth.

Relevant to the Methodology sections of the articles reviewed, all studies, expect for one (Lewis, Piercy, Sprenkel, & Trepper, 1990), provided descriptions of the participants’ race or ethnicity at minimum. Some studies extended the mention of
ethnicity to include subgroups within an ethnic group, such as Cuban and Mexican (Santisteban, et al., 2003; Szapocznik, et al., 1988; Szapocznik, et al., 1986; Szapocznik, et al., 1983), and to examine racial/ethnic differences between those who agreed to participate in the study and those who refused (Henggeler, Pickrel, & Brondino, 1999). One of the studies conducted with 100% Hispanic/Latino participants modified the delivery of therapy services to be bilingual, as needed by participants (Szapocznik, et al., 1988). In addition, three of the studies implemented with Hispanic/Latino participants included a measure of the number of years the participants had resided in the United States (Szapocznik, et al., 1988; 1986; 1983).

Some studies provided descriptions of the therapists’ race/ethnicity (Liddle, et al., 2001; Waldron, Slesnick, Brody, Turner, & Peterson, 2001; Henggeler, et al., 1999). One of these studies (Waldron, et al., 2001) also considered participants’ and therapists’ ethnicity in the process of random assignment to ensure pretreatment group equivalence. However, effects on treatment related to therapists’ ethnicity and bias were not examined in any study. Indeed, the relevance of examining these two variables is supported by the increasing literature on ethnic match and psychotherapy bias. For instance, Sue (1998) reported that Caucasian, Mexican American, African American, and Asian American patients tend to stay in treatment for longer periods of time when they are matched with a therapist of the same race/ethnicity, and length of stay in treatment has been associated with more favorable outcomes. In addition, attention has been called to the need to become more aware about the common occurrence of automatic biases and stereotypic attitudes that can impact the therapist-client relationship (APA, 2003).
There was no mention in the studies reviewed of modifications made to treatment components on account of ethnicity-related variables in most studies. However, some components of family-oriented therapies have been found to be highly compatible with the cultural values and beliefs of members of some ethnic groups (Bernal, et al., 1995). For instance, the emphasis of family-oriented therapies on the involvement of family members (or supporting members of the community) in the treatment of the designated patients (e.g., Multisystemic Therapy by Henggeler, et al., 1991; 1999) is consistent with the concept of interdependence that is highly valued in some cultures (Hall, 2001). Accordingly, it could be theorized that family-oriented therapies may be more culturally sensitive, and thus, more efficacious in the treatment of ethnic youth.

However, an examination on this regard of the studies that included at least somewhat proportionate representation of ethnic participants did not fully support this theory, as the findings were mixed. For example, Liddle and colleagues’ (2001) study on MFT, with a largely diverse sample, showed that the family-oriented therapy was indeed more effective than group therapy and psychoeducational intervention. When evaluated in a similar sample four months after treatment, Functional Family Therapy (FFT) was found more efficacious than individual Cognitive Behavioral Therapy (CBT), joint FFT and CBT, and psychoeducational group therapy. However, only joint FFT and CBT and group therapy maintained improvements at the 7-month follow up (Waldron, et al., 2001). In another example, two of Henggeler and colleagues’ (1991) studies on Multisystemic Therapy (MST) with a relatively large sample of African American youth showed that MST was more efficacious in the reduction of substance use-related arrests than individual counseling and probation services as usual. However, another study on
MST and probation services as usual by the same researchers, and with a relatively large sample of African American youth, found no overall treatment by time effects. Szapocznik and colleagues (1988; 1986; 1983) family-oriented treatments evaluated with Hispanic/Latino youth also produced mixed results. Two comparisons of One Person Family Therapy (OPFT) and Cojoint Family Therapy resulted in favorable results for OPFT (Szapocznik, et al., 1986; 1983). Although the OPFT approach included components from family-oriented therapies, the focus was on the implementation of treatment by one person in the family, without involving other family members. A third study by the same researchers compared Strategic Structural Systems Engagement (SSSE) and engagement as usual (Szapocznik, 1988). The results showed that SSSE was more efficacious than the engagement as usual condition. Similarly, Santisteban and colleagues’ (2003) study with Hispanic/Latino youth also demonstrated higher efficaciousness for the family-oriented therapy, Brief Strategic Family Therapy (BSFT), than for group counseling. The remaining studies had samples with higher proportions of Caucasian youth or did not specify the participants’ ethnicity. Overall, although these findings were mixed and in most cases the treatments did not seem to be selected particularly for their cultural sensitivity, there seems to be some support for the efficaciousness of therapies that included components that were congruent with the cultural values and beliefs of ethnically/racially diverse youth.

Within Statistical Analyses sections, more than half (61%) of the studies included ethnicity as one of the variables in analyses of treatment groups equivalence, while a smaller number of studies (28%) included this variable in the examinations of attrition effects. Results of these analyses suggested that there were no significant differences on
account of ethnicity in treatment conditions and/or attrition rates in any of the studies. Three studies (17%) examined the effects of race/ethnicity as a moderating variable (Kaminer, et al., 2002; Henggeler, et al., 1999; Friedman, 1989). No significant differences were found in treatment effects as a function of ethnicity in any of these studies. However, two of the studies (Kaminer, et al., 2002; Friedman, 1989) conducted this analysis with samples that included small numbers of ethnic participants (i.e., both studies had 90% Caucasian, 10% not specified, with sample sizes ranging from 88 to 135 participants). The third study (Henggeler, et al., 1999) included a larger number of participants of some ethnic backgrounds (i.e., 50% African American, 47% Caucasian, 1% Asian American, 1% Hispanic 1% Native American). However, it was not clear whether all participants from the various ethnicities represented were included in one group and then compared to Caucasians, or if the analysis represented the moderating effects of ethnicity considering only Caucasian and African American youth. Only one study acknowledged the unfeasibility of conducting this analysis due to the small sample size of ethnic participants and emphasized caution in the interpretation of the results (Liddle, et al., 2001).

A review of the Discussion/Conclusion sections revealed that most studies (61%) did not make stipulations or acknowledge possible limitations within these sections concerning race/ethnicity. Five of the 18 studies (22%) acknowledged limited generalizability due to the homogeneity of the samples (Latimer, Winters, D'Zurilla, & Nichols, 2003; Kaminer, et al., 2002; Liddle, et al., 2001; Waldron, et al., 2001; Szapocznik, et al., 1983). One study explicitly indicated that the treatment evaluated was appropriate for use with racially/ethnically diverse individuals, but the ethnicity of the
participants was not specified in the sample description (Lewis, et al., 1990). Another study, in which all participants were Hispanic/Latino, suggested the treatment evaluated was appropriate for use with non-Hispanic individuals (Santisteban, et al., 2003).

The studies were also examined to determine the extent to which they met Chambless and Hollon's (1998) criteria for ESTs. Because the inclusion criteria employed in the selection of the studies focused on controlled research procedures, it was assumed that all studies met some of these criteria (i.e., implemented random assignment, assessed substance use before and after treatment). In addition, criteria for ESTs require evidence demonstrating (1) the superiority of the treatment to the alternative treatment and (2) replication by at least one group of independent researchers. The following studies met criterion (1), as they demonstrated superior results compared to alternative treatments: Behavior Therapy (Azrin, et al., 1994), MST (Henggeler, 1991), Family Systems Therapy (Joanning, et al., 1992), CBT (Kaminer, et al., 1998), Integrated Family and Cognitive Behavior Therapy (IFCBT; Latimer, et al., 2003), Purdue Brief Family Therapy (PBFT; Lewis, et al., 1990), MFT (Liddle, et la., 2001), BSFT (Santisteban, et al., 2003), OPFT (Szapocznik, et al., 1983), and FFT (Waldron, et al., 2001).

However, none of the studies listed above met criterion (2) above (i.e., replicated by at least one group of independent researchers). Although two studies evaluated FFT independently, their findings were mixed. Thus, there were no studies that could be considered efficacious or empirically supported. However, Chambless and Hollon (1998) also specified a slightly modified criteria, which specifies that when criterion (2) is not met, a study conducted that meets all other criteria can be considered “possibly efficacious” (p.18) if there is no contradicting evidence. Based on this criterion, the
following treatments can be considered possibly efficacious: FST, IFCBT, PBFT, MFT, and BSFT.

The studies were also examined according to Sue's (1998) criteria for evaluation of ESTs appropriateness in the treatment of ethnically/racially diverse populations. Aside from the criteria specified earlier, it is also required that participants are assigned to treatment conditions in a blocked random order according to ethnicity and that researchers employ multiple, culturally cross-validated measures. Based on these criteria, none of the studies reviewed can be considered appropriate for ethnic populations.
CHAPTER V

SUMMARY

The purpose of this paper was to conduct a qualitative examination of the extent to which treatment outcome studies with adolescent substance abusers generalize to members of ethnically/racially diverse populations, based on their consideration of relevant ethnicity-related factors. The focus of this content analysis was on studies conducted under rigorous experimental conditions (e.g., utilized random assignment to treatment conditions, assessed substance pre and posttreatment), to increase the likelihood of unbiased treatment effects comparisons and reduce potential threats to internal validity. This requirement was also consistent with APA’s Task Force (1995) established criteria to evaluate efficacious therapies or ESTs. A comprehensive search of the literature on adolescent substance abuse identified 18 studies that met the specified criteria.

The criteria for the evaluation of ESTs’ appropriateness for use in the treatment of ethnically/racially diverse populations delineated by Sue (1998) were utilized to identify relevant ethnicity-related variables to be coded for this review. Other such variables were identified through the review of ethnicity-related factors associated with substance use that was presented in Chapter II of this paper. The variables examined included
specificity of sample characteristics (i.e., related to external validity), utilization of culturally appropriate measures, modifications made to studies’ designs, implementation, and interpretation on account of ethnicity, cultural sensitivity of the treatments, and consideration of ethnicity in statistical analyses and studies’ conclusions and discussions. Inter-rater reliability coefficients for both the search of relevant studies and their consideration of ethnicity-related variables indicated these procedures were conducted in a reliable manner.

The findings from this content analysis indicated that most treatments took place in outpatient settings and targeted primarily marijuana use, and secondarily hard drugs and alcohol. Although the types of settings in which the studies took place were representative of the treatment settings utilized in the general population, the substances targeted for treatment did not exactly reflect the trends in substance use reported by youth in national surveys. However, the types of substances targeted in treatment seemed consistent with those substances reported as being used by youth who are referred to treatment by juvenile justice, courts, and probation agencies. Thus, it may be that some substances (e.g., hard drugs) are associated with more problem behavior than others. Nevertheless, lack of correspondence between substances most commonly abused by ethnic youth and substances targeted in treatment may result in lack of interest or need to participate in treatment outcome studies from part of ethnic youth. The rationale for selecting targeted substances for treatment was not indicated in the studies, but it is possible that this decision may be, at least partially, influenced by the agencies that provide financial support to conduct studies.
The degree of specificity in the reporting of participants' ethnicity varied across studies, but a large number of studies, as compared to other areas of psychological research, reported on this variable to some extent. Although the majority of the participants across samples were Caucasian, several studies had samples with members of some ethnic groups that seemed representative of the general population. This was largely the case with Hispanic/Latino youth, who were over represented in some studies and in others they comprised 100% of the samples. African American youth were represented across studies to a much lesser extent but were over represented in studies that evaluated MST. The least represented ethnic groups were Asian American and Native American youth. Thus, based solely on an examination of proportionate representation of members of ethnic groups in the samples of the studies reviewed, it could be concluded that most of the treatments evaluated may be likely to generalize to Hispanic/Latino youth, MST may be likely to generalize to African American youth, and there were no treatments that may generalize to Asian American and Native American youth.

Although members of some ethnic groups were proportionately and/or over represented across some samples, the total number of participants of a particular ethnic group may not have been sufficient to examine treatment type by ethnicity effects, as this analysis was performed in very few instances. Therefore, it is questionable whether simply having samples in treatment research that are representative of the general population indeed has practical application. Instead, the emphasis may need to be on evaluating treatment efficaciousness with one ethnic group at a time, as was the case with
Hispanic/Latino youth, or on recruiting the number of ethnic participants required to conduct analyses in which the moderating effects of ethnicity on treatment are examined.

Relevant to outcome measures, no studies were found that acknowledged the relevance and/or importance of considering the instruments' cultural appropriateness, indicate whether the measures utilized were appropriate given the participants' ethnic backgrounds, or cautioned about potential limitations due to the unavailability use of these measures. The majority of the studies that focused exclusively on Hispanic/Latino youth reported having translated the outcome measures but neglected to comment on the cultural appropriateness of the instruments after they were translated. The lack of consideration of the instruments validity, reliability, and cultural-equivalence counters APA's Ethical Principles of Psychologists and Code Conduct (2002) and Guidelines on Multicultural Education, Training, Research, Practice, and Organizational Change for Psychologists (2003), particularly given that the test developers of some of the outcome measures utilized have created culturally appropriate versions of the instruments.

The participants' ethnicity was considered in various methodological aspects of the studies reviewed as follows: Few studies considered ethnicity in the assignment of participants and/or therapists to treatment conditions, in differences in the ethnicity of study participants and refusers, in ethnic subgroup identification, in the language in which the treatment was delivered, and in attrition by ethnicity effects. Although the latter analysis did not reveal significant differences, the results were not reported separated by ethnicity and the sample sizes may have been too small to detect interactions. In the studies where therapist ethnicity was considered, there were no analyses performed to examine therapist-client ethnic match effects or therapist bias.
effects. More than half of the studies considered ethnicity in analyses of group equivalence. The latter analysis found no significant group differences as a function of ethnicity. Of the studies that examined differential response to treatment on account of ethnicity, only one had sufficient number of participants of at least two ethnic groups that would result in a valid analysis. This procedure resulted in no significant effects of treatment by ethnicity. Several studies with similar samples did not conduct this analysis, nor was the relevance of conducting such analysis acknowledged.

The majority of studies focused on family-oriented therapies. Although the rationale for selecting this form of therapy was not explicited in terms of cultural relevance, some components of this form of treatment have been theorized to be congruent with the cultural philosophies, values, and beliefs shared by members of various ethnic groups (e.g., interdependence). Some support for this concept was found in that the studies with representative samples of ethnic participants that compared family-oriented therapies to other approaches seemed to be successful in reducing substance use. However, the few studies that evaluated non-family-oriented therapies (e.g., CBT) had samples with predominately Caucasian youth and/or did not provide specific descriptions about the participants’ ethnicity.

Finally, the overall findings of this content analysis did not find any studies that fully met Chambless and Hollon’s (1998) criteria for the evaluation of ESTs, but some (i.e., FST, IFCBT, PBFT, MFT, and BSFT) met criteria to be considered possibly efficacious treatments. Although none of the treatments met Sue’s (1998) criteria for the evaluation of treatments appropriate for ethnic populations (i.e., block random assignment by ethnicity, use of multiple, culturally valid measures), the challenge of utilizing culturally
appropriate measures due to their limited existence has been acknowledged (Chambles, et al., 1996).

Research and Clinical Implications

The findings of this content analysis have several implications applicable to both research and clinical work. Relevant to research, several essential procedures should be incorporated into treatment outcome research to help increase the degree of interpretation that can be made about the treatment’s generalizability with diverse populations. Some of these recommendations resonate those already made by others in the field (e.g., Bernal & Scharron-Del-Rio, 2001; Hall, 2001; Sue, 1998; Chambless, et al., 1996). First, studies should specify detailed descriptions about participants’ characteristics that may moderate treatment effects (e.g., ethnicity, gender, age, socioeconomic status). Descriptions of ethnicity should reflect the heterogeneity of the populations with whom the treatment is likely to be implemented. Accordingly, information regarding participants’ identification with ethnic subgroups (e.g., Japanese, Korean) should be available to the reader (Sue, 1998). The participants’ characteristics descriptions should address the question of with who is the treatment efficacious? (Chambless & Hollon, 1998). In addition, although the reporting of therapists’ ethnicity, as was done in some studies, contributes to external validity, examinations of the effects of therapist-client ethnic match and therapist bias would also enhance internal validity. Furthermore, it would be helpful to know whether the inclusion of ethnic participants was the result of recruiting from a convenience sample, as opposed to designing a study that focused on diverse participants. Recruiting
practices and types of samples involved have implications for the external validity of the treatment.

Second, as specified in APA’s ethical guidelines (2002; 2003), the psychometric properties, in terms of validity, reliability, and cultural-equivalence, of assessment instruments should be considered prior to their utilization in studies. As was mentioned before, the test developers of some of the measures commonly utilized in substance abuse research have been culturally validated. Although some substance use measures may seem intuitively unbiased because they utilize simple self-report questionnaires, the effects of cultural bias have not been examined empirically (Sue, Zane, & Young, 1994).

In addition, the translation of measures should follow transliteration procedures so that cultural-equivalence is maintained (Butcher, 1996). Also important is that researchers disclose whether measures were modified or whether culturally valid measures were unavailable, in which case the possible limitations and caveats for interpretation should be presented. Finally, measures of constructs (e.g., interdependence) that have been associated with treatment outcome should be included (Hall, 2001).

Other methodological procedures that may help increase interpretations about external validity include the implementation of block random assignment by ethnicity (Sue, 1998), which may help ensure group equivalence and reduce potential for systematic group differences (i.e., otherwise, groups may have the same number of ethnic participants, but are not equivalent in the number of members of a specific ethnic group). Some of the procedures implemented in some of treatments reviewed in this paper may also contribute to demonstrate their degree of generalizability. These included providing description of therapists’ characteristics and considering these characteristics in...
assignment to treatment conditions, examining differences between those who agree to participate and those who refused, and examining effects of moderating variables, such as ethnicity, on attrition and treatment effects. In addition, reporting of effect sizes by ethnicity may facilitate conducting meta-analyses that may permit quantitative evaluation of differential response to treatment (Chambless, et al., 1996). The inclusion of this information is crucial given that studies that utilize random assignment in the evaluation of treatment provide useful information about the efficaciousness of the treatment for the overall groups of participants in the treatment condition, but they do not demonstrate the treatment's success differentially for subsets of the sample.

The implications of these findings are also relevant to the incorporation of procedures that may help increase the degree of the treatments' cultural sensitivity. For instance, the importance of incorporating ethnicity-related variables in treatment development was a recurrent theme throughout this paper. However, prior to taking this step, it is important to first evaluate the theoretical foundations of the treatment to identify components that may conflict with ethnic participants' cultural philosophies and values (Hall, 2001). Other components may be incorporated in the early stages of the study design. For instance, researchers are encouraged to consider focusing the studies on the types of substances that are abused by those who need the treatments. Finally, despite the lack of sufficient information regarding the description of participants' ethnicity, conclusions that a treatment was appropriate for members of ethnically/racially diverse populations were made in one of the studies reviewed. Similarly, few studies cautioned about making generalizations based on small, homogenous samples. Researchers are urged to refrain
from making inaccurate generalizations about the individuals for whom the treatments are appropriate.

Some of the obvious clinical implications of these findings are relevant to selection of assessment measures and treatment modalities. Clinicians who utilize measures to conduct psychological evaluations and diagnose individuals of racially/ethnically diverse backgrounds should consider the cultural appropriateness of the measures, particularly given that culturally validated versions of some of the most widely utilized measures have been developed. Clinicians who anticipate working with racially/ethnically diverse populations should make efforts to obtain and utilize these measures. When culturally appropriate measures are not available, interpretations of test scores should be made with caution, in conjunction with other methods of evaluation, and these procedures should be recorded in the report (APA, 2003).

On the recommendation of APA’s Task Force (1995), to implement treatments identified as ESTs with racially/ethnically diverse patients in the absence of culturally appropriate psychological treatments, clinicians may select treatments that have not been evaluated specifically with these populations and/or are not compatible with the philosophies of some ethnic groups. However, it is important to consider that APA’s Task Force initial (1995) and subsequent (1998) evaluations did not focus specifically on adolescent substance abuse treatment outcome studies. Thus, clinicians are urged to utilize the studies presented in this paper as a guide in the selection of treatments, for example, by identifying those treatments that have been found effective in a particular ethnic group prior to choosing one that has not been found to be effective with a particular group.
Other less apparent clinical implications include the possible benefits of incorporating culture-related components into treatment protocols. For instance, because some components of family-oriented therapies seem to be compatible with the beliefs and values of members of various racial/ethnic groups (Bernal, et al., 1995), members of these populations may be more receptive to treatment modalities that emphasize interdependence and family involvement. In implementing family-oriented therapies, it is important that clinicians consider the differences in defining a family that may be found among members of diverse racial/ethnic backgrounds. For some racial/ethnic groups, extended family members, as well as members of the church or community, may be central in the individual’s primary support system. Cultural sensitivity may be conveyed by evaluating whether the selected treatments include components that may conflict with the individual’s cultural values prior to their implementation.

Clinicians should also consider the individual’s acculturation level in the treatment selection and implementation. For example, for highly acculturated individuals treatment protocols may not need to be modified from its standard form, whereas modifications may be required for individuals with lower degrees of acculturation. In conjunction with acculturation assessment, awareness about the prevalence rates of substances among members of some racial/ethnic groups may be helpful in determining whether some components of the treatment need to be incorporated. If use of a particular substance is uncommon among members of an racial/ethnic group, then there may be a higher need to include psychoeducational components for both the individual being treated and the family members. However, clinicians should consider that the level of acculturation of the individual in treatment might differ from that of the parents or other family members.
Prevalence of a substance among members of a particular racial/ethnic group and acculturation level may also help determine the degree to which the clinician need to customize the services provided. Given the family’s level of knowledge about substance use and treatment needs, the clinician may need to help family members obtain services (e.g., refer to medical doctors), perform interventions with other family members who may be abusing substances, and/or identify prevention opportunities.

In addition to considering culture-related variables in assessment, diagnosis, and treatment implementation, clinicians who work with individuals from diverse racial/ethnic backgrounds have been urged to become culturally competent (APA, 2003; Arredondo & Toporek, 1996; Lo & Fung, 2003). Becoming culturally competent involves acquiring knowledge about the individual’s culture and the impact of culture-related variables in all phases of psychotherapy, such as preengagement, engagement, assessment, treatment, and termination (Lo & Fun, 2003). In addition, cultural competence requires the integration of culture-related awareness, knowledge, and skills into the treatment process (Arredondo & Toporek, 1996). Thus, in order to interact effectively with individuals from different racial/ethnic backgrounds, clinicians are encouraged to be familiar with the established multicultural counseling guidelines, which include (1) being aware of, and acquiring knowledge about, attitudes and beliefs about the clinician’s own cultural background and their impact on the formation of biases and treatment settings, (2) being knowledgeable about the sociopolitical, cultural history, beliefs, and values of the populations served, (3) understanding the impact of culture-related variables on mental health (Arredondo & Toporek, 1996).
Future Directions

One of the reasons for contesting the external validity of ESTs in the treatment of members of racially/ethnically diverse populations has been the lack of utilization of multiple, cross-culturally validated measures. However, the dearth of these measures has also been recognized as a challenge in their wider implementation (Chambless, et al., 1996). Therefore, future research should focus on initiating the process of making these measures available for researchers’ use by conducting cross-cultural validation studies on the measures most commonly utilized in adolescent substance abuse research. An important stage in the cross-cultural validation process would be to review these measures for components that may be in conflict with culture-related concepts, values, or beliefs of individuals of racially/ethnically diverse backgrounds. In addition, cross-cultural validation involves ensuring that the content of the measures is equivalent in both cultures and that transliteration procedures are followed (e.g., use of independent translators, back translation procedures), as opposed to simply translating the measures (Butcher, 1996).

Another area of consideration in future research is the development of enlistment strategies to increase the number of racially/ethnically diverse youth that participates in treatment outcome studies. As was mentioned earlier, members of some racial/ethnic groups tend to abuse substances at greater rates than youth in the general population and tend to be over represented among those who are mandated to treatment due to legal involvement. However, members of these populations continue to be under represented in most treatment outcome studies. Therefore, research efforts are needed to identify and
understand the barriers that prevent racially/ethnically diverse youth from participating in treatment outcome research and how to overcome those barriers.

Several possible areas of future research were identified relevant to treatment. First, due to the limited data on effect sizes provided in published studies, it was not possible to determine quantitatively whether members of racially/ethnically diverse groups respond differentially to treatment. Thus, the next step would be to attempt to gather this data from the treatment outcome studies researchers in order to conduct meta-analytic studies. Combining effect sizes obtained across studies, separated by ethnicity, may provide further understanding about whether treatments that are developed without considering culture-related variables are indeed equally effective across populations. In addition, this procedure would help clarify whether those treatments thought to be congruent with ethnic cultures' values and beliefs (e.g., family-oriented therapies) are indeed more effective than other alternatives (e.g., Individual therapy).

Second, other long-term alternatives that may permit the examination of differential response to treatment would include the evaluation of ESTs with members of specific racial/ethnic groups. Thus, the treatment outcome of members of the same racial/ethnic group would be compared across treatment conditions, instead of across racial/ethnic groups. In addition, the identification of which specific components tend to be more effective would also help to determine whether those components are compatible with culture-related factors. A secondary component in this long-term alternative would include the evaluation of treatment components to determine whether they present potential conflict with the racial/ethnic cultural beliefs and values.
Conclusions

Given the rapid growth of ethnically/racially diverse populations in the United States, researchers and therapists face greater demands to create and provide adequate treatments. Furthermore, the treatment needs of ethnic youth are disproportionately high. As was reviewed earlier, more ethnic youth are being referred to treatment, but they are experiencing higher rates of treatment dropout and unsatisfactory release from treatment (Shillington & Clapp, 2003). In addition, researchers and clinicians have been urged to avoid making assumptions about the effectiveness of treatments until empirical evidence demonstrates their success with a particular population (Chambles, et al., 1996). Therefore, the need to evaluate the effectiveness of the treatments available for ethnically/racially diverse populations was warranted.

Given some of the limitations associated with qualitative research, it is difficult to draw concrete conclusions about the findings presented in this paper. Therefore, the answer to the primary question posed in this paper – Do ESTs generalize to ethnic populations? – varies depending on which point of view is adopted. Based on the stringent criteria established by members of APA, only a selected few treatments are considered efficacious in general. When the same treatments are evaluated for ethnic populations, the number is even smaller. In contrast, all studies reviewed seemed to meet the criteria for empirically supported treatments utilized by government substance abuse organizations (e.g., NIDA) that are a primary source of financial support. However, regarding ethnic diversity, the main requirement in government-funded research tends to be that researchers should make efforts to include members of traditionally underrepresented groups (Hall, 2001) and that participants’ ethnicity should be specified. Thus,
from this perspective samples with representation of ethnic participants in proportion to their representation in the general population may be adequate. In this case, the studies reviewed that had representative samples would be considered generalizable to ethnic populations. However, advocates for the development of culturally sensitive treatments (e.g., Bernal & Scharon-Del-Rio, 2001; Hall, 2001; Sue, 1998) may focus instead on the dearth of consideration of ethnicity-related variables across treatments (i.e., study design, assessment, treatment theoretical foundation, formulation, and delivery, and the interpretation of findings). Furthermore, from this view, optimal results may be accomplished when relevant ethnicity-related variables are incorporated into treatment, particularly given that several studies showed no significant treatment by time differences. Thus, from this perspective, extant ESTs do not generalize to racially/ethnically diverse populations.
# APPENDIX I

## Adolescent Substance Abuse Treatment Outcome Studies

<table>
<thead>
<tr>
<th>Article</th>
<th>Population Description</th>
<th>Substances Targeted</th>
<th>Outcome Measure/Instruments</th>
<th>Treatment (Type, duration, &amp; frequency of tx)</th>
<th>Consideration of ethnicity in study design, implementation, &amp; interpretation</th>
<th>Overall Results</th>
<th>Consideration of ethnicity in Discussion, Conclusion, or Recs, Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amini, et al., 1982</td>
<td>Outpatient &amp; Inpatient N = 87</td>
<td>Mostly marijuana, also cocaine/crack, hallucinogen</td>
<td>Parent Satisfaction Scale, Youth Satisfaction Scale, Beck Depression Inventory (BDI), Quay Problem Behavior Checklist (QPBC), Urinalysis</td>
<td>a. Inpatient Psychodynamically oriented individual, group, family, occupational, and recreational therapies, problem behavior therapy; drug use, alcohol use; Global Change</td>
<td>Number of participants assigned to each tx group not specified</td>
<td>None specified</td>
<td>None specified</td>
</tr>
<tr>
<td></td>
<td>52% Caucasian, 22% Spanish surname, 16% African American, 10% Native Americans, Asians, &amp; other</td>
<td>69% Male Age M = 16</td>
<td></td>
<td>b. Supportive Therapy (ST) Two-hour session, once per week, for 14.9 sessions</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Azrin, et al., 1994</td>
<td>Marijuana, alcohol, hard drugs</td>
<td>Urinalysis, Time-Line Follow-Back Interview, Arrest history records</td>
<td>a. Behavioral Therapy (BT) One-hour sessions, twice per week; later reduced w/ progress</td>
<td>Number of participants assigned to each tx group not specified</td>
<td>None specified</td>
<td>None specified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mostly marijuana, also cocaine/crack, hallucinogen</td>
<td></td>
<td>Tx duration M = 15.1 sessions N = 15</td>
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<tr>
<td></td>
<td></td>
<td>19% African American (how many participants of each ethnicity not specified)</td>
<td></td>
<td>b. Supportive Therapy (ST) Two-hour session, once per week, for 14.9 sessions N = 11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>77% Male Age M = 16</td>
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</tr>
<tr>
<td></td>
<td>Azrin, et al., 2001</td>
<td>Marijuana, alcohol, hard drugs</td>
<td>Urinalysis, Time-Line Follow-Back Interview, Arrest history records</td>
<td>a. Family Behavior Therapy Tx duration M = 13.5 sessions N = 29</td>
<td>Number of participants assigned to each tx group not specified</td>
<td>None specified</td>
<td>None specified</td>
</tr>
<tr>
<td></td>
<td>N = 56</td>
<td>79% Caucasian, 16% Hispanic</td>
<td></td>
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</tr>
</tbody>
</table>

*Note: The table represents a summary of various adolescent substance abuse treatment outcome studies, detailing the populations, substances targeted, outcome measures, treatments, and considerations for interpreting the results.*
<table>
<thead>
<tr>
<th>Article</th>
<th>Population Description</th>
<th>Substances Targeted</th>
<th>Outcome Measure/Instruments</th>
<th>Treatment (Type, duration, &amp; frequency of tx)</th>
<th>Consideration of ethnicity in study design, implementation, &amp; interpretation</th>
<th>Overall Results</th>
<th>Consideration of ethnicity in Discussion, Conclusion, or Recs. Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friedmann, 1989</td>
<td>2% African American, 3% Other, 90% Caucasian</td>
<td>Alcohol, marijuana, amphetamines, Other: (cocaïne, PCP, halluc., trans.)</td>
<td>Client Interview Form, Parent Interview Form, Rosenberg Self-Esteem Scale, Brief Symptom Inventory, Family Role Task Scale, Parent-Adolescent Communication Form, Family Environment Scale, Parent-Child Relationship Problems Scale, Emotional/ Psychological Problems Inventory</td>
<td>a. Individual Cognitive Problem-Solving</td>
<td>1. Considered ethnicity in tx groups equivalence analysis</td>
<td>Group equivalence analysis showed no significant differences between tx completers and non-completers on ethnicity. Attrition effects examination showed no significant differences between tx completers and non-completers on ethnicity. No significant overall tx X time effects</td>
<td>None specified</td>
</tr>
<tr>
<td>Henggel er, et al., 1991</td>
<td>74% African American</td>
<td>Alcohol, marijuana, soft drug use subscales</td>
<td>a. Multisystemic Therapy (MST)</td>
<td>1. Described ethnic breakdown of sample</td>
<td>Youth in MST reported significantly lower soft drug use than youth in DYS-US. Treatment effects for hard drugs not examined due to data limitations</td>
<td>None specified</td>
<td></td>
</tr>
<tr>
<td>Henggel er, et al., 1991</td>
<td>70% Caucasian</td>
<td>Number of arrests for substance-related offenses (i.e., possession, selling)</td>
<td>a. Multisystemic Therapy (MST)</td>
<td>1. Described ethnic breakdown of sample</td>
<td>Group equivalence analysis showed no significant group differences on ethnicity. Attrition effects examination showed no significant differences between tx</td>
<td>None specified</td>
<td></td>
</tr>
<tr>
<td>Article</td>
<td>Population Description</td>
<td>Substances Targeted</td>
<td>Outcome Measure/Instruments</td>
<td>Treatment (Type, duration, &amp; frequency of tx)</td>
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<td>Overall Results</td>
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</tr>
<tr>
<td>Henggel, et al., 1999</td>
<td>Outpatient</td>
<td>Alcohol, marijuana, other (hard drugs, prescription drugs, narcotics, inhalants)</td>
<td>1. Personal Experience Inventory</td>
<td>a. Multisystemic Therapy (MST) Home-based sessions Direct therapist contact hours M = 40</td>
<td>None specified</td>
<td>Number of sessions not specified</td>
<td>Considered ethnicity as moderating variable</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Urinalysis</td>
<td></td>
<td></td>
<td>in attrition effects examination</td>
<td>Youth in MST reported significantly lower number of substance use-related arrests than youth in IC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Self-Report Delinquency Scale 4. Arrest and out-of-Some placement records from Department of Juvenile Justice</td>
<td>b. Usual Community Services Probation officer ordered outpatient or inpatient substance abuse services from local clinic, 12-step program Average direct therapist contact hours not specified</td>
<td></td>
<td></td>
<td>No differences on ethnicity found between participants and refusers.</td>
</tr>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>Group equivalence analysis showed no significant group differences on ethnicity.</td>
</tr>
<tr>
<td>Joanning, et al., 1992</td>
<td>Outpatient</td>
<td>Marijuana, hard drugs</td>
<td>1. Dyadic Adjustment Scale</td>
<td>a. Family Systems Therapy (FST) Seven to 15 weekly, 60-90 minutes sessions</td>
<td>None specified</td>
<td>1. Examined ethnic differences between study participants and refusers. 2. Described ethnic breakdown of sample</td>
<td>No significant overall tx X time effects.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Parent-Adolescent Communication Questionnaire</td>
<td></td>
<td></td>
<td>3. Described ethnicity of therapists &amp; Considered ethnicity in tx groups equivalence analysis</td>
<td>No significant moderating effects on account of ethnicity.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Family Coping Strategies</td>
<td>b. Adolescent Group Therapy (AGT) Twelve weekly, 90-minute sessions</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>4. Self-Report Family Inventory</td>
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<td></td>
<td></td>
<td></td>
<td>5. Urinalysis</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>6. Drug involvement survey</td>
<td>c. Family Drug Education (FDE) Six biweekly, 150-minute sessions</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>7. Legal involvement</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>8. School performance</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>9. Collateral reports of youth drug use from parents and therapists</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>2. Time Line Follow-Back</td>
<td></td>
<td></td>
<td>2. Considered ethnicity in tx groups equivalence analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Diagnostic Interview</td>
<td>b. Interacational Therapy (IT) N = 16</td>
<td></td>
<td></td>
<td>Group equivalence analysis showed no significant group differences on ethnicity.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. Schedule for children</td>
<td></td>
<td></td>
<td></td>
<td>Youth in CBT had significantly lower estimates of drug use and problem behaviors than youth in AGT and FDE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5. Child Behavior Checklist</td>
<td></td>
<td></td>
<td></td>
<td>No significant tx X time effects for AGT vs. FDE</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6. Youth Self-report</td>
<td></td>
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<td></td>
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<td></td>
<td>7. teen addiction severity Index</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>8. Situational Confidence Questionnaire</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>9. TeenTx Services Review</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>2. Self-report of substance</td>
<td></td>
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</tr>
</tbody>
</table>

[Note: The table is truncated and not all entries are included for brevity. Further information can be found in the original document.]
<table>
<thead>
<tr>
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<th>Consideration of ethnicity in Discussion, Conclusion, or Recap, Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>90% Caucasian Ethnicity of remaining sample not specified 79% Male Age M = 15</td>
<td>Marijuana, alcohol, other drugs</td>
<td>1. Diagnostic Interview for Children and Adolescents (youth and parent versions) 2. Adolescent Diagnostic Interview-Revised 3. Personal Experience Inventory 4. Urinalyses 5. Family Assessment Measure (FAM) 6. Rational Thinking Questionnaire 7. Social Problem Solving Inventory (SPSI) 8. Motivated Strategies for Learning Questionnaire (MSLQ) 9. Client Personal History Questionnaire</td>
<td>a. Integrated Family and Cognitive-Behavior Therapy (IFCBT) Sixteen weekly, 60-minute individual family therapy sessions and 32, 90-minute cognitive-behavioral group sessions twice-weekly N = 21 1. Described ethnic breakdown of sample</td>
<td>Compared to DHPE, youth in IFCBT had significant reductions in alcohol and marijuana use throughout 6-month period (based on both self-reports and urinalyses), significant higher levels of rational problem solving, lower levels of problem avoidance (based on SPSI), and significantly higher levels of learning strategy skills (based on MSLQ). Parents of youth in IFCBT showed significant improvements on the communication, involvement, and values/norms scales of FAM.</td>
<td>Acknowledged limitation of study's generalization due to under-representation of minorities.</td>
<td></td>
</tr>
<tr>
<td>Latimer, et al., 2003</td>
<td>Outpatient N = 43 86% Caucasian 9.5% Hispanic 7% Native American 4.5% Asian American 76.7% Male Age M = 16</td>
<td>Marijuana, alcohol, other drugs</td>
<td>1. Diagnostic Interview for Children and Adolescents (youth and parent versions) 2. Adolescent Diagnostic Interview-Revised 3. Personal Experience Inventory 4. Urinalyses 5. Family Assessment Measure (FAM) 6. Rational Thinking Questionnaire 7. Social Problem Solving Inventory (SPSI) 8. Motivated Strategies for Learning Questionnaire (MSLQ) 9. Client Personal History Questionnaire</td>
<td>a. Integrated Family and Cognitive-Behavior Therapy (IFCBT) Sixteen weekly, 60-minute individual family therapy sessions and 32, 90-minute cognitive-behavioral group sessions twice-weekly N = 21 1. Described ethnic breakdown of sample</td>
<td>Compared to DHPE, youth in IFCBT had significant reductions in alcohol and marijuana use throughout 6-month period (based on both self-reports and urinalyses), significant higher levels of rational problem solving, lower levels of problem avoidance (based on SPSI), and significantly higher levels of learning strategy skills (based on MSLQ). Parents of youth in IFCBT showed significant improvements on the communication, involvement, and values/norms scales of FAM.</td>
<td>Acknowledged limitation of study's generalization due to under-representation of minorities.</td>
<td></td>
</tr>
<tr>
<td>Liddle, et al., N = 182</td>
<td>Alcohol, marijuana</td>
<td>1. Youth drug use self-report</td>
<td>a. Multidimensional Family Therapy (MDFT) Sixteen sessions over 6-month period</td>
<td>1. Described ethnic breakdown of sample</td>
<td>Group equivalence analysis showed no significant group differences on ethnicity.</td>
<td>Acknowledged inability to</td>
<td></td>
</tr>
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<td>Article</td>
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</tr>
<tr>
<td>2001</td>
<td>51% Caucasian</td>
<td>others</td>
<td>2. Parent collateral reports of youth drug use</td>
<td>N = 47</td>
<td>2. Partially described ethnicity of therapists</td>
<td>NC</td>
<td>Due to small sample of ethnic minority participants, which limits generalization.</td>
</tr>
<tr>
<td></td>
<td>18% African</td>
<td></td>
<td>3. Urinalysis</td>
<td>b. Multifamily Education Intervention (MFI)</td>
<td>3. Considered ethnicity in tx groups equivalence analysis</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>American</td>
<td></td>
<td>4. Acting Out Behavior Scale from Devereux Adolescent Behavior Rating Scale</td>
<td>N = 52</td>
<td>4. Considered ethnicity in tx groups equivalence analysis</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15% Hispanic</td>
<td></td>
<td>5. School performance based on GPA</td>
<td>c. Adolescent Group Therapy (AGT)</td>
<td>5. Considered ethnicity in attrition effects examination (Cuban vs. non-Cuban)</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10% Native American</td>
<td></td>
<td></td>
<td>Number of sessions not specified</td>
<td>6. Group equivalence analysis showed no significant group differences on ethnicity.</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6% Asian</td>
<td></td>
<td></td>
<td>N = 53 (30 cases refused to participate)</td>
<td>7. No significant overall tx X time effects at posts.</td>
<td>NC</td>
<td>None specified for non-Hispanic samples as well.</td>
</tr>
<tr>
<td></td>
<td>80% Male</td>
<td></td>
<td></td>
<td></td>
<td>8. Acknowledged limited generalizability due to homogeneity of study sample</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age M = 16</td>
<td></td>
<td></td>
<td></td>
<td>9. Described ethnic breakdown of sample</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td>Santiste et al., 2003</td>
<td>Outpatient</td>
<td>Alcohol, marijuana, other drugs</td>
<td>1. Revised Behavior Problem Checklist</td>
<td>a. Brief Strategic Family Therapy (BSFT)</td>
<td>1. Described need for evaluating tx with this population</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100% Hispanics</td>
<td></td>
<td>2. Addictions Severity Index</td>
<td>b. Group Counseling (GC)</td>
<td>2. Translated measures</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(51% Cuban, 14% Nicaraguan, 10% Colombian, 6% Puerto Rican, 3% Peruvian, 1% Mexican, 15% other Hispanic nationality)</td>
<td></td>
<td>3. Family Environment Scale</td>
<td>3. Described ethnic breakdown of sample</td>
<td>3. Considered ethnicity in tx groups equivalence analysis</td>
<td>NC</td>
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</tr>
<tr>
<td></td>
<td>75% Male</td>
<td></td>
<td>4. Structural Family Systems Rating (SFSR)</td>
<td>4. Considered ethnicity in tx groups equivalence analysis</td>
<td>4. Considered ethnicity in attrition effects examination (Cuban vs. non-Cuban)</td>
<td>NC</td>
<td></td>
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<tr>
<td></td>
<td>Age M = 17</td>
<td></td>
<td>5. Urinalysis</td>
<td>5. Considered ethnicity in attrition effects examination (Cuban vs. non-Cuban)</td>
<td>6. No significant overall tx X time effects at posts.</td>
<td>NC</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>6. Youth self-report of drug use</td>
<td>7. Acknowledged limited generalizability due to homogeneity of study sample</td>
<td>8. Considered ethnicity in attraction effects examination (Cuban vs. non-Cuban)</td>
<td>NC</td>
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</tr>
<tr>
<td>Szapocz Outpatient</td>
<td>Marijuana, cocaine</td>
<td></td>
<td>1. Psychiatric Status</td>
<td>a. Strategic Structural Systems Engagement (SSSE)</td>
<td>1. Described ethnic breakdown of sample</td>
<td>NC</td>
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<tr>
<td></td>
<td>N = 126</td>
<td></td>
<td>2. Schedule (includes drug abuse score)</td>
<td>N = 56</td>
<td>2. Measured number of years participants lived in the U.S.</td>
<td>NC</td>
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</tr>
<tr>
<td></td>
<td>Gender not specified</td>
<td></td>
<td>3. Client Oriented Data Acquisition Process</td>
<td>b. Engagement as Usual (EAU)</td>
<td>3. Therapy was conducted bilingually in Spanish and English</td>
<td>NC</td>
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</tr>
<tr>
<td></td>
<td>60% Male</td>
<td></td>
<td></td>
<td>N = 57</td>
<td>4. Compared to youth in CFT, youth in OPFT had significant improvements in personality problems, inadequate development, and socialized delinquency scales of BPC, drug abuse, impulse control, and total score on PSS.</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age M = 16</td>
<td></td>
<td></td>
<td></td>
<td>5. Described ethnic breakdown of sample</td>
<td>NC</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>6. Measured number of years participants lived in the U.S.</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td>Szapocz Outpatient</td>
<td>Marijuana, cocaine</td>
<td></td>
<td>1. Psychiatric Status</td>
<td>a. One Person Family Therapy (OPFT)</td>
<td>1. Described ethnic breakdown of sample</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N = 108</td>
<td></td>
<td>2. Schedule (includes drug abuse score)</td>
<td>Eight or more sessions</td>
<td>2. Measured number of years participants lived in the U.S.</td>
<td>NC</td>
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<tr>
<td></td>
<td>Gender not specified</td>
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<td>3. Behavior Checklist (BPC)</td>
<td>N = 19</td>
<td>3. Translated measures to Spanish</td>
<td>NC</td>
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</tr>
<tr>
<td></td>
<td>84.3% Hispanic</td>
<td></td>
<td></td>
<td></td>
<td>4. Compared to youth in CFT, youth in OPFT had significant improvements in personality problems, inadequate development, and socialized delinquency scales of BPC, drug abuse, impulse control, and total score on PSS.</td>
<td>NC</td>
<td></td>
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<tr>
<td></td>
<td>78.3% Male</td>
<td></td>
<td></td>
<td></td>
<td>5. Described ethnic breakdown of sample</td>
<td>NC</td>
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</tr>
<tr>
<td></td>
<td>Age M = 15</td>
<td></td>
<td></td>
<td></td>
<td>6. Measured number of years participants lived in the U.S.</td>
<td>NC</td>
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</tr>
<tr>
<td>Szapocz Outpatient</td>
<td>Marijuana, cocaine</td>
<td></td>
<td>1. Psychiatric Status</td>
<td>a. One Person Family Therapy (OPFT)</td>
<td>1. Described ethnic breakdown of sample</td>
<td>NC</td>
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<tr>
<td></td>
<td>N = 37</td>
<td></td>
<td>2. Schedule (includes drug abuse score)</td>
<td>Eight or more sessions</td>
<td>2. Measured number of years participants lived in the U.S.</td>
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<tr>
<td></td>
<td>Gender not specified</td>
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<td>3. Behavior Checklist (BPC)</td>
<td>N = 19</td>
<td>3. Translated measures to Spanish</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100% Hispanic</td>
<td></td>
<td></td>
<td></td>
<td>4. Compared to youth in CFT, youth in OPFT had significant improvements in personality problems, inadequate development, and socialized delinquency scales of BPC, drug abuse, impulse control, and total score on PSS.</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(82% Cuban)</td>
<td></td>
<td></td>
<td></td>
<td>5. Described ethnic breakdown of sample</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gender not specified</td>
<td></td>
<td></td>
<td></td>
<td>6. Measured number of years participants lived in the U.S.</td>
<td>NC</td>
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</tr>
<tr>
<td></td>
<td>60% Male</td>
<td></td>
<td></td>
<td></td>
<td>7. Described ethnic breakdown of sample</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age M = 16</td>
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<td></td>
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<td>8. Measured number of years participants lived in the U.S.</td>
<td>NC</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9. Described ethnic breakdown of sample</td>
<td>NC</td>
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</tr>
<tr>
<td>Szapocz Outpatient</td>
<td>Marijuana, cocaine</td>
<td></td>
<td>1. Psychiatric Status</td>
<td>a. One Person Family Therapy (OPFT)</td>
<td>1. Described ethnic breakdown of sample</td>
<td>NC</td>
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<tr>
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<td>N = 52</td>
<td></td>
<td>2. Schedule (includes drug abuse score)</td>
<td>Eight or more sessions</td>
<td>2. Measured number of years participants lived in the U.S.</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gender not specified</td>
<td></td>
<td>3. Behavior Checklist (BPC)</td>
<td>N = 19</td>
<td>3. Translated measures to Spanish</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100% Hispanic</td>
<td></td>
<td></td>
<td></td>
<td>4. Compared to youth in CFT, youth in OPFT had significant improvements in personality problems, inadequate development, and socialized delinquency scales of BPC, drug abuse, impulse control, and total score on PSS.</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(84% Hispanic, 8% Latin American, 1% Other)</td>
<td></td>
<td></td>
<td></td>
<td>5. Described ethnic breakdown of sample</td>
<td>NC</td>
<td></td>
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<tr>
<td></td>
<td>Gender not specified</td>
<td></td>
<td></td>
<td></td>
<td>6. Measured number of years participants lived in the U.S.</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>60% Male</td>
<td></td>
<td></td>
<td></td>
<td>7. Described ethnic breakdown of sample</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age M = 15</td>
<td></td>
<td></td>
<td></td>
<td>8. Measured number of years participants lived in the U.S.</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9. Described ethnic breakdown of sample</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td>Szapocz Outpatient</td>
<td>Marijuana, cocaine</td>
<td></td>
<td>1. Psychiatric Status</td>
<td>a. One Person Family Therapy (OPFT)</td>
<td>1. Described ethnic breakdown of sample</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N = 52</td>
<td></td>
<td>2. Schedule (includes drug abuse score)</td>
<td>Eight or more sessions</td>
<td>2. Measured number of years participants lived in the U.S.</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gender not specified</td>
<td></td>
<td>3. Behavior Checklist (BPC)</td>
<td>N = 19</td>
<td>3. Translated measures to Spanish</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100% Hispanic</td>
<td></td>
<td></td>
<td></td>
<td>4. Compared to youth in CFT, youth in OPFT had significant improvements in personality problems, inadequate development, and socialized delinquency scales of BPC, drug abuse, impulse control, and total score on PSS.</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(84% Hispanic, 8% Latin American, 1% Other)</td>
<td></td>
<td></td>
<td></td>
<td>5. Described ethnic breakdown of sample</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gender not specified</td>
<td></td>
<td></td>
<td></td>
<td>6. Measured number of years participants lived in the U.S.</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>60% Male</td>
<td></td>
<td></td>
<td></td>
<td>7. Described ethnic breakdown of sample</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age M = 15</td>
<td></td>
<td></td>
<td></td>
<td>8. Measured number of years participants lived in the U.S.</td>
<td>NC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9. Described ethnic breakdown of sample</td>
<td>NC</td>
<td></td>
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</tbody>
</table>

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<table>
<thead>
<tr>
<th>Article</th>
<th>Population Description</th>
<th>Substances Targeted</th>
<th>Outcome Measure/ Instruments</th>
<th>Treatment (Type, duration, &amp; frequency of tx)</th>
<th>Consideration of ethnicity in study design, implementation, &amp; interpretation</th>
<th>Overall Results</th>
<th>Consideration of ethnicity in Discussion, Conclusion, or Recs, Sections</th>
</tr>
</thead>
<tbody>
<tr>
<td>nik, et al., 1986</td>
<td>specified N = 35 100% Hispanic (77% Cuban) Gender not specified Age M = 17</td>
<td>barbiturates, alcohol</td>
<td>Schedule (includes drug abuse score)</td>
<td>N = 18</td>
<td>Breakdown of sample Marginal significant effect for tx X time at follow up was more effective than CFT on most clinical measures.</td>
<td></td>
<td>Acknowledged results may not generalized to other ethnic minority populations because sample consisted mostly of Caucasian and highly acculturated English-speaking Hispanics</td>
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<tr>
<td>Waldron, et al., 2001</td>
<td>N = 120 35% Caucasian 46% Hispanic 8% Native American 8% Other 80% Male Age M = 16</td>
<td>Marijuana</td>
<td>1. Form 90D of Time-Line Follow-Back 2. Parents’ collateral reports of youth drug use 3. Urinalysis 4. Problem Oriented Screening Instrument 5. Child Behavior Checklist</td>
<td>a. Functional Family Therapy (FFT) Tx duration 12 hours b. Cojoint Family Therapy (CFT) Tx duration 12 hours c. Joint FFT+CBT Tx duration 24 hours d. Psychoeducational Group Eight secondary prevention format, 90-minute sessions</td>
<td>1. Described ethnic breakdown of sample 2. Considered ethnicity in random assignment 3. Considered ethnicity in tx groups equivalence analysis 4. Described ethnicity of therapists 5. Considered ethnicity in therapist assignment Group equivalence analysis showed no significant group differences on ethnicity. At 4-month follow up youth in the FFT condition had the highest drug use reductions, followed by those in Joint FFT + CBT, and then those in psychoeducational group (based on self-reports). Youth in CBT condition did not evidence significant reductions in drug use. At 7-month follow up youth in joint and group had significant reductions in substance use (based on self-reports).</td>
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</tr>
</tbody>
</table>
REFERENCES


dependent youth. *Journal of Child and Adolescent Substance Abuse, 11*(1), 1-43.


W.G. Dahlstrom, D. Lachar, & L.E. Dahlstrom (Eds.), *MMPI Patterns of American Minorities* (pp. 51-86). Minneapolis, MN: University of Minnesota Press.


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VITA

Graduate College
University of Nevada, Las Vegas

Marilyn J. Strada

Home Address:
2807 Albemarle Way
Henderson, Nevada 89014

Degrees:
Bachelor of Arts, Psychology, 2002
Chapman University

Special Honors and Awards:
Barnes & Noble Book Scholar Award (Spring, 2004), Las Vegas, Nevada
Outstanding Research Award (Spring, 2004), Achievement Center, Department of Psychology, University of Nevada, Las Vegas
Graduate Student Research Award (Spring, 2004), Department of Psychology, University of Nevada, Las Vegas
Graduate Student Research Award (Spring, 2003), Department of Psychology, University of Nevada, Las Vegas
Graduate Student of the Year Award (Fall, 2002), Achievement Center, Department of Psychology, University of Nevada, Las Vegas
Outstanding Research and Service Award (Fall, 2002), Achievement Center, Department of Psychology, University of Nevada, Las Vegas
Minority Fellowship Program Award (2002-2005), American Psychological Association
Gray Key Academic Honor Award (2002), Chapman University
Cheverton Trophy Nominee (2002), Chapman University
Psychology Department Honor Academic Award (2002), Chapman University
Provost Scholarship Award (2000-2001), Chapman University
Dean’s Honor’s List (2000-2001), Chapman University
Member, Psi Chi (2000-Present), Psychology Honor Society
Dean’s Honor’s List (1998-1999), Golden West College
Member, Alpha Beta Gamma (1998-1999), Honor Society

Publications:


Thesis Title: Consideration of Race/Ethnicity in Adolescent Substance Abuse Treatment Outcome Studies

Thesis Examination Committee:
  Chairperson, Bradley Donohue, Ph. D.
  Committee member, Roslyn Caldwell, Ph. D.
  Committee member, Daniel Allen, Ph. D.
  Graduate Faculty Representative, Larry Ashley, Ed. S.