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PREDICTING ALCOHOL AND SUBSTANCE ABUSE TREATMENT OUTCOMES
AMONG HISPANIC AND AFRICAN AMERICAN SUBSTANCE ABUSERS

by

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A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in the Department of Psychology
in the College of Sciences
at the University of Central Florida
Orlando, Florida

Fall Term
2006

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ABSTRACT

Alcohol and drug use and abuse are significant concerns in the United States, yet few studies have investigated how cultural factors, such as acculturative type and acculturative stress, impact substance abuse treatment outcomes. In this study, African American ($n = 171$) and Hispanic ($n = 101$) substance abusers' acculturative type and acculturative stress levels were compared to substance abuse treatment outcome. Although the results indicated that acculturative type did not predict substance abuse treatment outcome, a positive correlation between acculturative stress and alcohol and substance abuse problems emerged among the combined and Hispanic samples. In the combined and Hispanic groups, participants experiencing higher levels of acculturative stress demonstrated higher levels of substance use consequences at baseline. Additionally, Hispanic participants experiencing higher levels of pressure to acculturate related to difficulty in interpersonal interactions due to language or cultural barriers and encountering prejudice had higher levels of substance use consequences at the outcome of treatment. These findings suggest that cultural factors play a role in substance abuse treatment outcome. Recommendations on how substance abuse treatment facilities can respond to the unique needs of African American and Hispanic clients are provided.

ACKNOWLEDGMENTS

I would like to thank the many people who have helped me to successfully complete this project. First, I would like to thank my committee members (Dr. Charles Negy, Dr. Jack McGuire, Dr. Ed Shirkey, and Dr. Debbie Orr) for their support and feedback throughout this endeavor. My dissertation chair, Dr. Negy deserves special thanks for his tireless effort to facilitate the completion of this project. Also, I would like to extend a most sincere and grateful thanks to my fellow classmates and internship-mates who provided endless encouragement during the final months of this project. Lastly, I would like to thank my husband, Michael Patrick, for his never-ending love and support. His words of encouragement, wisdom, and insight kept me focused throughout the project.

TABLE OF CONTENTS

LIST OF ACRONYMS/ABBREVIATIONS	vii
CHAPTER ONE: INTRODUCTION.....	1
CHAPTER TWO: LITERATURE REVIEW.....	2
Ethnic Identity and ASA.....	4
Acculturation and ASA.....	9
Acculturative Stress and ASA	15
Family Dynamics	17
ASA, Mental Health, and Treatment	18
Ethnic Differences in ASA Treatment.....	20
Therapist-Client Alliance and ASA.....	21
The Current Study.....	22
CHAPTER THREE: METHODOLOGY	27
Participants.....	27
Measures	27
Procedures.....	38
CHAPTER FOUR: FINDINGS	40
Analyses by Ethnicity	48
African Americans	49
Hispanics.....	56
CHAPTER FIVE: CONCLUSION.....	64
Limitations of This Study	77

LIST OF REFERENCES 80

LIST OF ACRONYMS/ABBREVIATIONS

SAMHSA	Substance Abuse and Mental Health Services Administration
NSDUH	National Survey on Drug Use and Health
ASA	Alcohol and Substance Abuse
AA	Alcoholics Anonymous
NA	Narcotics Anonymous
ESI	Ethnic Society Immersion
SMAS	Stephenson Multigroup Acculturation Scale
DSI	Dominant Society Immersion
MEIM	Multigroup Ethnic Identity Measure
EIS	Ethnic Identity Search
ABC	Affirmation, Belonging, Commitment
S.A.F.E.	Social, Attitudinal, Familial, and Environment Acculturative Stress Scale
BSI	Brief Symptom Inventory
InDUC	Inventory of Drug Use Consequences
SRRS	Social Readjustment Rating Scale
FES	Family Environment Scale
WAI	Working Alliance Inventory
MSPSS	Multidimensional Scale of Perceived Social Support
MANOVA	Multivariate Analysis of Variance
ANOVA	Analysis of Variance

IV	Independent Variable
DV	Dependent Variable
MANCOVA	Multivariate Analysis of Covariance
ANCOVA	Analysis of Covariance

CHAPTER ONE: INTRODUCTION

Alcohol and drug use and abuse are significant concerns in the United States. According to the Substance Abuse and Mental Health Services Administration's (SAMHSA) 2002 National Survey on Drug Use and Health (NSDUH), an estimated 120 million Americans aged 12 or older (51% of the population) consume alcohol and 19.5 million Americans aged 12 or older (8.3% of the population) use illicit drugs. The estimated rates of alcohol and drug use vary among ethnic groups. The estimated rates of current alcohol use among ethnic groups are 55.0% of Whites, 49.9% of multiracial individuals, 44.7% of Native Americans, 42.8% of Hispanics, 39.9% of African Americans, and 37.1% of Asian Americans. The estimated rates of illicit drug use among ethnic groups are 11.4% of multiracial individuals, 10.1% of Native Americans, 9.7% of African Americans, 8.5% of Whites, 7.2% of Hispanics, and 3.5% of Asian Americans. Among identified substance users, 22.0 million have been recognized as having a substance abuse or dependence problem, while only 3.5 million (1.5% of the population) received some kind of treatment for their problem in the year prior to the NSDUH survey (SAMHSA, 2003).

The purpose of this study was to examine a myriad of variables thought to be related to alcohol and substance abuse (ASA) and treatment outcome for Hispanic and African American adult substance abusers seeking treatment from a community agency for addiction. Specific variables that were examined for their potential association with ASA, negative experiences related to ASA, and ASA treatment outcome were: acculturative type, acculturative stress, perceived childhood family cohesion and conflict, therapist-client alliance, general stress, symptoms of psychopathology, and social support.

CHAPTER TWO: LITERATURE REVIEW

With widespread use and abuse of alcohol and drugs, the importance of understanding the etiological progression of use, risk factors increasing the probability of use, and protective influences diminishing the likelihood of use warrant attention within psychological research. To date, the etiological progression of ASA suggests the strong influence of family factors toward substance use patterns. Some research has demonstrated that a genetic predisposition to ASA increases the likelihood of substance use among children (Crabbe & Phillips, 1998; McGrupe, 1999; Vanyukov, 1999). Within the family environment, factors that increase the likelihood of substance use among children include poor and inconsistent family management and disciplinary practices (Anderson & Henry, 1994; Barnes, Reifman, Farrell, & Dintcheff, 1994; Clark, Neighbors, Lesnick, & Donovan, 1998; Gorman-Smith, Tolan, Loeber, & Henry, 1998; Hawkins, Catalano, & Miller, 1992; Peterson, Hawkins, Abbott, & Catalano, 1995; Steinberg, Fletcher, & Darling, 1994), family conflict (Duncan, Duncan, & Hops, 1994; Hawkins, et al., 1992; Madu & Matla, 2003), low bonding to family (Hawkins, et al., 1992), poor quality child-parent relationships (Barnow, Schuckit, Lucht, John, & Freyberger, 2002; Johnson & Pandina, 1991; McArdle, et. al., 2002), lack of parental supervision (Griffin, Botvin, Scheier, Diaz, & Miller, 2000), low family morals (Madu & Matla, 2003), and family alcohol/drug behaviors and attitudes (Hawkins, et al., 1992; Kilpatrick, et al., 2000). As children who have experienced one or more of these risk factors grow older, the likelihood of developing an ASA problem increases (Bray, Adams, Getz, & Baer, 2001; Kilpatrick, et al., 2000).

In addition to the family environment, children's school environment also influences their substance use patterns. Factors that have been found to increase the likelihood of substance use

among children include the availability of drugs and alcohol in their environment, academic failure, a low degree of commitment to school (Hawkins, et al., 1992), dropping out of high school (Beauvais, Chavez, Oetting, Deffenbacher, & Cornell, 1996), peer rejection in elementary school (Prinstein & LaGreca, 2004), and association with drug-using peers (Dishion, Capaldi, Spracklen, & Fuzhong, 1995; Farrell & Danish, 1993; Kandel, Kessler, & Margulies, 1978; Newcomb & Bentler, 1989; Patterson, Forgatch, Yoerger, & Stoolmiller, 1998; Swaim, Oetting, Edwards, & Beauvais, 1989).

Children who have experienced negative, stressful events, including being physically assaulted or sexually assaulted (Clark, Lesnick, & Hegedus, 1997; Kaplan, et al., 1998; Kendler, et al., 2000; Kilpatrick, et al., 2000; Rind, Tromovitch, & Bauserman, 1998), childhood maltreatment (Clark, et al., 1997; Kilpatrick, et al., 2000; Stewart, 1996; Widom, Ireland, & Glynn, 1995), extreme economic deprivation, neighborhood disorganization (Hawkins, et al., 1992), witnessing violence, and experiencing post traumatic stress (Kilpatrick, et al., 2000) are more likely to use drugs or alcohol than children who have not experienced these events. Moreover, substance use among children has been found to correlate with involvement in the criminal justice system, engaging in risky sexual behavior (Huba, et. al., 2000), a negative temperament and disposition (Neighbors, Clark, Donovan, & Brody, 2000), favorable attitudes toward using substances, early onset of drug use, rebelliousness, alienation from others (Hawkins, et al., 1992), childhood antisocial behavior (Boyle, et al., 1992; Cadoret, Yates, Troughton, Woodworth, & Stewart, 1995; Clark, Parker, & Lynch, 1999; Clark, Vanyukov, & Cornelius, 2002), and sensation-seeking behavior in childhood (Crawford, Pentz, Chou, Li, & Dwyer, 2003).

In contrast, protective influences that have been identified in the literature that seem to diminish the likelihood of substance use include the following: resiliency, strong relational bond with parents, positive maternal characteristics, marital harmony, external support system, positive temperament and disposition (Hawkins, et al., 1992), family cohesion and support (Duncan, et al., 1994; Duncan, Tildesley, Duncan, & Hops, 1995; Foxcroft & Lowe, 1995; Henry, Robinson, & Wilson, 2003; Myers, Newcomb, Richardson, & Alvy, 1997; Scheer, Borden, & Donnermeyer, 2000; Shek, 1998; Stephenson, Henry, & Robinson, 1996; Vakalahi, 2002), and peer acceptance (Prinstein & LaGreca, 2004).

Ethnic Identity and ASA

Ethnic identity—an individual’s subjective sense of belonging to a group or culture—is a frequently studied construct in ethnic minority research (Phinney, Horenczyk, Liebkind, & Vedder, 2001). Ethnic identity includes an individual’s attitudes, feelings, values, and commitment toward their cultural heritage. Phinney (1989) developed a three-stage progression of ethnic identity formation that she applied to adolescents. In the first stage, Unexamined Ethnic Identity, adolescents have not been exposed to ethnic identity issues and have not explored their ethnicity. In the second stage, Ethnic Identity Search, adolescents are involved in exploring and seeking to understand the meaning of ethnic identity and how it relates to them personally. In the third stage, Achieved Ethnic Identity, individuals have a clear, confident sense of their own ethnic identity. Low levels of ethnic identity are associated with the first stage, whereas high levels of ethnic identity are associated with the third stage.

Phinney et al. (2001) suggest that ethnic identity and national identity (one's identification with the dominant culture of the country in which one is living) serve as two orthogonal dimensions. An individual's identity can independently vary on both of the dimensions, resulting in four identity groups (these groups are analogous to those related to Berry's Bidimensional Model of Acculturation that is discussed later in this paper under *Acculturation and ASA*). Those who identify with both their ethnic group and the dominant culture's group would be classified as *integrated* or bicultural. Those with a *separated* identity identify only with their ethnic group. Individuals who identify with the dominant culture's group have an *assimilated* identity. Last, those who do not identify with either group would be classified as *marginalized*.

Phinney et al. (2001) posit that having a bicultural or integrated ethnic identity, that is, perceiving that one is both part of an ethnic group and part of the larger society, is generally associated with higher levels of overall well-being, self-esteem, and adaptation compared to individuals identifying with only one group or no group. Overall, having a marginalized ethnic identity is associated with the lowest levels of well-being, self-esteem, and adaptation. Phinney et al. emphasize the interactional nature of ethnic identity and adaptation. An individual's attitudes, characteristics, and circumstances, as well as the responses of the larger society to that individual, each influence the role of ethnic identity in adaptation and well-being. Ethnic identity is likely to be stronger when an individual has a strong desire to retain his or her cultural heritage *and* the larger society encourages and accepts cultural pluralism. In contrast, when the larger society emphasizes assimilation, the individual's ethnic identity may be compromised.

As a logical extension with respect to ASA, it may be surmised that individuals displaying an integrated ethnic identity may experience better mental health, and specifically,

less ASA problems. Surprisingly, though, research exploring the relation between ethnic identity and substance using attitudes and behaviors is limited, and, at times, inconclusive and contradictory. Almost all of the studies have been conducted with adolescents (or adolescents and young adults). Some studies have found that youth reporting high levels of ethnic identity also report disapproving attitudes toward substance use behavior (Wallace, 2002) and lower levels of substance use (Brook, Whiteman, Balka, Win, & Gursen, 1998; Marsiglia, Kulis, & Hecht, 2001; Thomas, 1996). On the other hand, some studies have found a positive correlation between ethnic identity and ASA (James, Kim, & Armijo, 2000). Still, some studies have concluded there is no relation between ethnic identity and ASA (Bates, Beauvais, & Trimble, 1997; Yan, 1999). One reason for contradictions among the studies may be because ethnic identity was measured as a uni-dimensional concept, without taking national identity into account.

For example, Wallace (2002) examined the attitudes of 108 African American high school students concerning substance use. Her results found that the students with higher levels of ethnic identity were more likely to disapprove of substance use. Similarly, Brook and her colleagues (1998) conducted structured interviews with 555 Puerto Rican men and women between the ages of 16 and 24. During their interviews, they found several protective factors associated with lowered drug use, including being knowledgeable about their culture, being active within their culture, feeling attached to their group, and identifying with their ethnic group.

Marsiglia et al. (2001) explored the relationship between ethnic identity factors and substance use and exposure to drugs and alcohol among 408 low-income, seventh grade students from a large city in the Southwest. They found that identified ethnicity and ethnic identity

measures together explained more of the differences in substance use and exposure among the ethnic groups than either did alone. Specifically, African American, Mexican American, and mixed-ethnicity students who reported a strong sense of ethnic pride reported less drug use and exposure, whereas White students, with a strong sense of pride, reported more drug use and exposure. Also, African American students were more likely to use hard drugs, such as cocaine, than the other groups. Mexican American students reported more exposure to a variety of drugs compared to the other groups, whereas, mixed-ethnicity students reported beginning drug use at an earlier age than the other groups. Regarding poly-substance abuse, White students reported using the fewest types of drugs compared to the other groups.

Thomas (1996) explored the potential protective factors against substance use in 33 Haitian American high school students, compared to 33 African American and 33 Hispanic American high school students from the Northeast. Overall, the Haitian American students reported less substance use than the African American and Hispanic American students. Presumed protective factors among the Haitian American students included higher levels of ethnic identity, parental control, and religiosity. The African American and Hispanic American students reported lower levels of these potential protective factors, compared to the Haitian American students. These findings support the notion that high levels of ethnic identity are correlated with lowered levels of ASA.

James et al. (2000) examined the relation between ethnic identity and substance use among 127 adolescents, between the ages of 11 and 20, from a large, urban school in the Pacific Northwest. Among the minority groups, high levels of ethnic identity were associated with high levels of drug use. They found that White students scored lowest in measures of ethnic identity, including affirmation and belongingness, ethnic identity achievement, ethnic behavior, and other

group orientation, than Asian American, African American, Hispanic American, Native American, and mixed-ethnicity students. These findings suggest a negative correlation between ethnic identity and substance use.

Yan (1999) investigated ethnic identity and attachment as potential protective factors against substance use. In a sample of ethnically diverse adolescents participating in a substance education program, Yan did not find support for her hypothesis that ethnic identity and attachment (either to mother, father, or peers) would protect against substance use. Neither factor alone, nor in combination with one another predicted substance use.

Bates et al. (1997) investigated the relationship between Native American ethnic identification and alcohol use. They examined 202 Native Americans, aged 12 to 21, on measures of ethnic identity, alcohol use, associations with alcohol-using peers, and family sanctions against alcohol use. Ethnic identity did not predict alcohol use among the youth. On the other hand, they found that associating with alcohol-using peers correlated with alcohol use. For females, family sanctions against alcohol predicted alcohol involvement. These findings suggest no correlation between ethnic identity and substance use.

The inconsistent findings across ethnic identity and substance use research may be an artifact of diverse operational definitions of ethnic identity used in the studies. None of the above-mentioned studies examined the influence of national identity in relation to an individual's affiliation with their own ethnic group. Examining a bi-dimensional definition of ethnic identity, as suggested by Phinney et al. (2001), may lead to more consistent findings and therefore, is a fertile area for additional research.

Acculturation and ASA

Segall, Lonner, and Berry (1998) point out that “culture,” and all that culture implies with respect to human development, thought, and behavior, should be central within psychological theory and research. Cross-cultural psychology has a strong history of exploring the construct of *acculturation* among ethnic groups. Acculturation generally refers to adopting the values, attitudes, and behaviors of a host culture. Some researchers have found that acculturation level is positively correlated with mental health (Kohbod, 1997; Neff & Hoppe, 1993; Padilla, Wagatsuma, & Lindholm, 1985; Shibazaki, 1999; Sundquist, Bayard-Burfield, Johansson, & Johansson, 2000). With regard to ASA, however, mixed results have been found in the relation between acculturation and substance use in Hispanic adolescents (Carvajal, Photiades, Evans, & Nash, 1997; Coutts, 2000; Epstein, Botvin, & Diaz, 2001; Figueroa-Moseley, 1998; Fraser, Piacentini, Van Rossem, Hien, & Rotheram-Borus, 1998; Garcia, 1999; Greene, 1997; Stewart, 1999), Hispanic adults (Alaniz, Treno, & Saltz, 1999; Caetano & Clark, 2003; Farabee, Wallisch, & Maxwell, 1995; Gossage, 1998; Ortega, Rosenheck, Alegria, & Desai, 2000; Polednak, 1997), and Vietnamese American college students (Yi & Daniel, 2001).

Epstein et al. (2001) examined the role of acculturation, as measured by language use and proficiency, in substance use patterns among 1,299 Hispanic middle-school students from New York City. They found that adolescents who spoke English with their parents smoked marijuana more frequently than their peers who spoke Spanish at home. One year later during a follow-up study with the same participants, the researchers found that students who spoke English *and* who were bilingual at home were more likely to use multiple drugs, including marijuana, alcohol, and tobacco, compared to their counterparts who spoke Spanish at home. Carvajal et al. (1997) also

examined acculturation, using a measure of language, and substance use among 448 Hispanic adolescents. Among the youth, use of Spanish did not predict substance use behaviors.

Association with non-Hispanic peers was determined to be a protective factor against substance use, but acculturation levels moderated the extent to which peer relationships had an influence on substance use.

Similar studies have also examined uni-dimensional measures of acculturation, classifying individuals in terms of high or low levels of acculturation. In a dissertation study, Coutts (2000) investigated the influence of acculturation and on substance use among 209 Mexican American adolescents. She found that substance use among the youth was significantly correlated with acculturation. In another dissertation research project, Garcia (1999) examined acculturation, feelings of alienation, and substance use among a group of 30 Hispanic adolescents attending an ASA treatment program. She hypothesized that adolescents with higher levels of acculturation would have higher levels of substance use compared to adolescents with lower levels of acculturation. She also hypothesized that higher levels of substance use would be associated with higher levels of feeling alienated. Her findings did not support her first hypothesis, and, in fact, suggested that higher levels of acculturation were associated with *lower* levels of substance use. Her findings did, however, support her second hypothesis. Adolescents who experienced higher levels of alienation did engage in higher levels of substance use compared to their counterparts.

Stewart's (1999) dissertation explored the differences in post-treatment substance use and delinquent behaviors between 40 Mexican American and 230 White adolescents who completed ASA treatment. Although both groups displayed similar rates of relapse and abstinence following treatment, Mexican American adolescents tended to have more intense use and more

consequences related to use compared to their White counterparts. The relationship between delinquent behavior and substance use was stronger for the Mexican American youth than the White youth. Also, Mexican American adolescents who had higher levels of acculturation were less likely to use substances and more likely to attend Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) meetings following treatment.

Fraser and her colleagues (1998) examined the effects of acculturation and mental health problems on substance use among suicidal Hispanic female adolescents. Their sample consisted of 116 female adolescents referred to a clinical due to suicidal gesturing. They found that adolescents who reported both high levels of acculturation and mental health problems were the most likely to be substance abusers.

Ortega et al. (2000) explored acculturation and mental health among 8,098 Hispanic and White adults. One finding was that higher levels of acculturation were associated with mental health problems among Mexican Americans, and with ASA problems among Puerto Ricans. They also found that Mexican American adults were less likely to have a psychiatric disorder compared to White adults. Farabee et al. (1995) compared substance use rates between 1,807 Hispanic and 3,232 White adults. They found that prevalence rates among the Hispanic adults increased as acculturation level increased, and that the Hispanics adults with the highest level of acculturation had substance use rates comparable to the White adults.

Based on a review of the existing literature, Caetano and Clark (2003) proposed that the relationship between acculturation and substance use among Hispanics is complex. One of the more stable findings, however, indicate that acculturation is positively correlated with alcohol use, especially among women. For example, Polednak (1997) conducted telephone surveys regarding alcohol use among 665 Hispanic adults from New York and Connecticut. Higher

levels of acculturation were found to correlate with higher levels of alcohol use, and this acculturation difference was especially pronounced among women. In contrast, he found that men, overall, reported more alcohol use than women. This gender difference was especially pronounced among individuals with lower levels of acculturation.

Alaniz et al. (1999) conducted a telephone survey examining the relationship between acculturation and alcohol use among 932 Hispanic adults in California. Acculturation predicted alcohol use among the women, but not the men. More specifically, acculturation level was associated with heavy drinking among the women, whereas place of birth best predicted heavy drinking among the men. Among less acculturated participants, women were more likely to abstain from drinking than men. Among relatively highly acculturated participants, no gender difference emerged in alcohol use.

In her dissertation study, Gossage (1998) examined acculturation levels and substance use patterns among 159 Hispanic women who sought pregnancy testing at medical clinics throughout New Mexico. She found that women with higher levels of acculturation were more likely to use alcohol and cigarettes than women with lower acculturation scores. She also examined whether social support provided a protective barriers against substance use, but the results failed to indicate a correlation between social support and substance use.

Yi and Daniel (2001) examined substance use among 412 Vietnamese American college students. Both acculturation and gender were significantly associated with substance use. Specifically, highly acculturated students were more likely to use substances than students who were less acculturated, and male Vietnamese students were more likely to use substances than female students. Among female students, however, smoking cigarettes did not correlated with acculturation level.

The above-mentioned studies examined acculturation from a uni-dimensional perspective. In order to better understand the relationship between acculturation and substance use, it seems critical to examine more complex conceptualizations of acculturation. Berry (Berry, 1970; Berry, 1974; Berry, 1984; Berry, 1999) has proposed a Bidimensional Acculturation Model, which involves two major components in the acculturation process: 1) Cultural Maintenance- the extent to which people value and wish to maintain their cultural identity and behaviors, and 2) Contact Participation- the extent to which people value and seek out contact with those outside their own group and wish to participate in the daily life of the larger society. Individuals can respond affirmatively or negatively to each dimension, resulting in four acculturative groups. These four groups include: 1) Assimilation- individuals who do not maintain their own cultural identity, but seek daily interaction with other cultures, 2) Separation- individuals who place a value on holding on to their original culture and avoid interaction with other cultures, 3) Integration- individuals who place value on both maintaining their own cultural identity and seeking daily interaction with other cultures, and 4) Marginalization- individuals who have little interest in their own cultural identity or interacting with other cultures. Research (Berry, 1999; Berry & Sam, 1997) suggests that individuals who prefer Integration are the best psycho-emotionally adjusted, those who prefer Marginalization are the least adapted, and those who prefer Assimilation or Separation are moderately adapted.

In his dissertation research project, Greene (1997) examined 189 Mexican American adolescents in terms of their membership in the above-mentioned acculturative groups: integrated, separated, assimilated, and marginalized. Assimilated adolescents were the most likely to engage in substance use, and to report the highest levels of subjective academic competence, but were also the least engaged in school compared to the other groups. Separated

adolescents reported being less likely to engage in substance use, feeling more connected to their teachers and school, and feeling less academically competent compared to the other groups.

Adolescents falling in the integrated acculturation category were more successful academically and more satisfied emotionally than adolescents in the other categories. Adolescents in the marginalized group or category had the lowest self-esteem and poorest school grades compared to the other groups.

In a similar study, Figueroa-Moseley's (1998) dissertation research found that Hispanic adolescents who were integrated or bicultural engaged in the most substance use compared to all other groups. These findings suggest that a bi-dimensional approach may facilitate understanding substance use patterns. Specifically, the findings demonstrate that an individual who reports high levels of connection with the dominant culture but not with their own group may not demonstrate the same risk patterns as an individual who reports high levels of connection with both their ethnic group and the dominant culture.

Much of the literature research exploring acculturation and substance use (Alaniz, et al., 1999; Caetano & Clark, 2003; Carvajal, et al., 1997; Coutts, 2000; Epstein, et al., 2001; Farabee, et al., 1995; Figueroa-Moseley, 1998; Fraser, et al., 1998; Garcia, 1999; Gossage, 1998; Greene, 1997; Ortega, et al., 2000; Polednak, 1997; Stewart, 1999; Yi & Daniel, 2001) has defined acculturation as a unidimensional concept (i.e. language proficiency or immersion in the dominant culture) rather than a more complex, two-dimensional concept. Berry's Bidimensional Acculturation Model and its four acculturation categories have rarely been explored in the ASA literature and have not been explored in the ASA treatment literature. The discrepant associations between acculturation and ASA may in part be related to the confounding nature of acculturation and/or language preference relative to the specific communities from which

Hispanic participants are sampled. As a case in point, a “highly acculturated” Hispanic participant, for example, obtained from a sample of Hispanics living in a low-income, Hispanic barrio, probably is not very acculturated in absolute terms, but merely is *higher* in acculturation relative to other Hispanics from the same barrio. Researchers may erroneously draw conclusions about their “highly acculturated” Hispanics, which in fact do not generalize to Hispanics who are indeed, highly acculturated in absolute terms (Negy & Woods, 1992). In a similar vein, choice of language itself may not be relevant to ASA behaviors as much as what the norms are regarding preferred language within Hispanic samples’ specific communities.

Acculturative Stress and ASA

A specific area within acculturation—relevant to ASA and treatment outcomes—is individuals’ reactions to the acculturation process. Acculturative stress is a negative reaction associated with the challenges of acculturation (Berry, 1999). Berry, Kim, and Boski (1998) have identified some broad factors that appear to influence an individual’s level of acculturative stress: 1) the nature of the dominant society, 2) the nature of the acculturating group, and 3) the mode of acculturation or adaptation chosen by an individual. Berry et al. have found that acculturative stress correlates with an individual’s acculturation classification. Specifically, individuals who integrate themselves into both cultures experience the least acculturative stress, individuals who marginalize themselves from both cultures experience the most acculturative stress, and individuals who assimilate or separate themselves experience moderate acculturative stress.

Cabrera-Stait (2001), in her dissertation research, explored the relation between acculturative stress and alcohol use among 93 Hispanic adolescents. The results indicated a significant positive correlation between acculturative stress and alcohol usage. Higher levels of alcohol use, in turn, were associated with higher levels of maladaptive and delinquent behavior. Additionally, male adolescents experienced less acculturative stress than the female adolescents, and Hispanic adolescents who had difficulties with the English language experienced more acculturative stress than adolescents who did not have problems with English.

In his dissertation project, Diaz (1995) examined the relation between acculturative stress and alcohol use among 100 Puerto Rican adults. Acculturative stress was significantly associated with increased alcohol use among the participants. These findings were the strongest among female, dark-skinned, U.S.-born Puerto Ricans than the rest of their sample. Among African American adult women, Smith (2000) examined correlates of acculturative stress and alcohol use, finding that acculturative stress correlated positively with alcohol use among the women.

Gil, Wagner, and Vega (2000) examined the relation between acculturative stress and alcohol use among 1,051 immigrant and 968 U.S.-born Hispanic male adolescents over a period of three years. Among the immigrant adolescents, higher levels of acculturative stress were associated with lower scores on familism and parental respect. Among the U.S.-born adolescents, lower levels of acculturative stress correlated with higher scores on familism. Further, Gil et al. found that alcohol use was significantly higher among the adolescents born in the U.S. compared to immigrant youth.

Overall, there is limited research examining the relationship between acculturative stress and substance use. The limited conclusions, however, suggest that acculturative stress is

associated with increased substance use among Hispanic youth (Cabrera-Strait, 2001; Gil, Wagner, & Vega, 2000), African American women (Smith, 2000), and among U.S.-born Puerto Rican adults (Diaz, 1995). The relation between minority individuals' acculturative stress and ASA problems warrants additional research. In so much as acculturative stress is implicated in increased substance use (Cabrera-Strait, 2001; Diaz, 1995; Gil, Wagner, & Vega, 2000; Smith, 2000), acculturative stress may interfere with the ability to reduce substance use and to benefit fully from ASA treatment.

Family Dynamics

Family dynamics, including family conflict and lack of cohesion, appear to influence substance use patterns among children. Over a decade ago, Hawkins et al. (1992) reviewed the existing literature examining antecedents to adolescent substance abuse. They found a robust and consistent pattern of family conflict correlating with increased substance use. Children from homes broken by marital discord were most at risk for substance use and delinquent behaviors. Using a latent growth modeling technique, Duncan et al. (1994; 1995) found that family cohesion in early adolescence negatively correlated with substance use, but peer influences muted the effect with older adolescents. Stephenson et al. (1996) also found a negative correlation between family cohesion and adolescent substance use among 235 high school students. In a multidimensional model of family influences on substance use, Myers et al. (1997) examined the potential protective family factors against substance use among 455 inner-city African American primary school children and their adolescent siblings. A significant negative correlation was found between family cohesion and substance use.

More recently, Scheer et al. (2000) found a negative correlation between family cohesion and substance use among 3,189 11th grade students. Specifically, parents who talked about the dangers of using alcohol and drugs, who were involved in their children's school activities, and who fostered a belief that they cared about their children tended to have children who did not use substances compared to families that did not have these factors. Those findings have proven to be rather robust among adolescents (see, for example, Henry, Robinson, and Wilson [2003]; Vakalahi [2002]).

All considered, research demonstrates rather consistent evidence of a relation between family cohesion and lower probability of substance use behaviors among children and adolescents. Stated conversely, the absence of nurturance and support in families-of-origin likely predisposes children and adolescents to experiment with, and ultimately use alcohol or illicit substances as a means to cope with a less than optimum home environment. As such, the importance of family environment, as it relates to adult ASA patterns, warrant additional attention.

ASA, Mental Health, and Treatment

Clinical and epidemiological literature suggests that 50% to 80% of adult substance abusers have also met criteria for at least one comorbid mental health disorder in their lifetime (Helzer, 1988; Khantzian & Treece, 1986; Rounsaville, Weissman, Crits-Christoph, Wilber, & Kleber, 1982). The most commonly occurring comorbid disorders among adult substance abusers are Antisocial Personality Disorder (Cadoret, O'Gorman, Troughton, & Heywood, 1985; Cadoret, Troughton, & Widmer, 1984; Hesselbrock, Meyer, & Keener, 1985), depressive

disorders (Schuckit, 1986; Stabenau & Hasselbrock, 1984; Weissman & Meyer, 1980), and anxiety disorders (Mullaney & Trippett, 1979; Smail, Stockwell, Canter, & Hodgson, 1984; Stockwell & Bolderston, 1987). Similar patterns of comorbid mental health disorders and ASA disorders have been observed in adolescent populations (Bukstein, Glancy, & Kaminer, 1992; Hovens, Cantwell, & Kiriakos, 1994; Kaminer, Tarter, Bukstein, & Kabene, 1992).

In a review of adolescent substance users, Armstrong and Costello (2002) concluded that nearly 60% of adolescents with an ASA problem simultaneously had a comorbid mental health disorder. The most commonly occurring comorbid mental health disorders in substance abusing and/or dependent adolescents were Conduct Disorder (Armstrong & Costello, 2002; Clark & Miller, 1998; Clark, DeBellis, Lynch, Cornelius, & Martin, 2003; Rohde, Lewinsohn, & Seeley, 1996), Oppositional Defiant Disorder (Armstrong & Costello, 2002), Attention Deficit-Hyperactivity Disorder (Armstrong & Costello, 2002; Gittelman, Mannuzza, Shenker, & Bonagura, 1985; Mannuzza, Klein, Bessler, Malloy, & LaPadula, 1993; Milberger, Biederman, Faraone, Chen, & Jones, 1997; Molina & Pelman, 2003), depressive disorders (Armstrong & Costello, 2002; Clark, Kirisci, & Tarter, 1998; Clark & Sayette, 1993; Deykin, Levy, & Wells, 1987; Martin, Lynch, Pollock, & Clark, 2000), and anxiety disorders (Clark & Sayette, 1993). Other studies have found associations between adolescent drug use and low self-esteem, antisocial behavior, rebelliousness, aggressiveness, crime, delinquency, truancy, and poor school performance (Greenbaum, Prange, Friedman, & Silver, 1991; Jessor, et al., 1980; Jessor & Jessor, 1977; Johnston, O'Malley, & Eveland, 1978; Kandel, et al., 1978; Kleinman, Wish, Deren, & Rainone, 1986; McCord & McCord, 1960; Neighbors, Kempton, & Forehand, 1992; Paton & Kandel, 1978; Robins, 1974; Zucker & Barron, 1973).

Regarding treatment, several meta-analytic studies examining ASA treatment outcomes reveal that receiving ASA treatment is more effective in reducing ASA than not receiving treatment (Brewer, Catalano, Haggerty, Gainey, & Fleming, 1998; Glanz, Klawansky, McAullife, & Chalmers, 1997; Griffith, Rowan-Szal, Roark, & Simpson, 2000; Marsch, 1998; Prendergast, Podus, Chang, & Urada, 2002; Stanton & Shadish, 1997). Additionally, studies have shown that ASA treatment reduces an individual's dependence or abuse when compared to no treatment control groups or minimal treatment control groups (Anglin & Hser, 1990; Apsler, 1994; Berg, 1992; Carlson & Gabriel, 2001; Carroll & Rounsaville, 2003; Crits-Christoph & Siqueland, 1996; Gerstein & Harwood, 1990; Hubbard, 1992; Johnson & Gerstein, 2000; Kedia & Perry, 2003; Kleber, 1989; Morgenstem, Blanchard, Morgan, Labouvie, & Hayaki, 2001).

Ethnic Differences in ASA Treatment

Research has been conducted examining the similarities and differences among ethnic groups with respect to ASA treatment. With regard to adolescents referred to ASA treatment, Hispanic and White youth have been found to be more likely to meet criteria for substance abuse/dependence disorders than African American youth (Johnston, O'Malley, & Bachman, 1995a; Johnston, O'Malley, & Bachman, 1995b; Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995; Kilpatrick, et al., 2000; Widom, et al., 1995; Windle, 1994). In contrast, Hispanic and African American youth have been found to be more likely to be referred to ASA treatment through the criminal justice system, report marijuana as their drug of choice, be mandated for treatment, and be released unsatisfactorily from treatment than White adolescents (Schillington, & Clapp, 2003). Further, Hispanic and African American youth who have been referred to

outpatient ASA treatment also had significant levels of co-morbid mental health problems relative to Whites (Robbins, et al., 2002).

Therapist-Client Alliance and ASA

The role of the therapist-client alliance in helping Hispanic and African American ASA clients overcome their addictions is virtually non-existent in the literature. In the context of cross-cultural therapy, the therapist-client alliance possibly is the most critical component of successful treatment, given that diverse clients likely have a heightened need to feel understood by their therapists in light of their dissimilar cultural backgrounds. Based on mostly White clients with an array of mostly non-ASA clinical problems, Horvath and Symonds (1991) conducted a meta-analysis of 20 outcome studies and found that the therapist-client relationship accounted for significantly more variance in treatment outcome than the specific type of intervention. The findings from that meta-analysis were corroborated by a subsequent meta-analysis examining the same question (Martin, Garske, & Davis, 2000).

The debate over the relative importance of specific types of treatment versus the therapist-client alliance in accounting for successful therapy continues (Wampold, 2001). Nonetheless, without discounting the importance of sound therapeutic techniques and interventions, the findings from the meta-analyses suggest that the relationships formed between therapists and clients form critical cornerstones of successful therapy. As a result, more studies are necessary to examine the therapist-client alliance for Hispanic and African American substance abusers in order to know with more certainty if previous findings about the alliance generalize to this specific and challenging group of clients.

The Current Study

The social scientific literature has identified a myriad of variables associated with the proclivity to use alcohol and illicit substances. Among Hispanics and African Americans, three variables seem particularly implicated in ASA beyond the variables commonly delineated in the literature. Specifically, ethnic identity, acculturative type, and acculturative stress appear to possibly interact and influence ASA behavior among ethnic minorities. Thus, one primary goal of the current study was to predict alcohol and substance abuse treatment outcome from these three variables.

Much of the research conducted on ethnic identity, acculturative type, and acculturative stress has yielded mixed or inconsistent results. Those results are further limited by the preponderance of adolescents serving as the participants under focus. Moreover, this body of research seems limited by its excessive reliance on community samples which typically include participants with minimal or no alcohol or illicit substance usage. The current study represents an attempt to address some of these shortcomings by focusing exclusively on Hispanic and African American adults. The decision to focus on adults derived from two considerations. One, adults likely have formed stable ethnic identities, relative to adolescents. Studying participants with stabilized ethnic identities theoretically should lead to more accurate study outcomes. Two, Hispanic and African American adults have longer histories of dealing with issues related to acculturation and its associated stress, relative to adolescents. Again, this advantage may increase the precision and meaningfulness of the findings.

Based on Berry's Bidimensional Acculturation Model (Berry, 1970; Berry, 1974; Berry, 1984; Berry, 1999), researchers have sought to classify individuals into four acculturation

categories: 1) Assimilation- individuals who do not maintain their own cultural identity, but seek daily interaction with other cultures, 2) Separation- individuals who place a value on holding on to their original culture and avoid interaction with other cultures, 3) Integration- individuals who place value on both maintaining their own cultural identity and seeking daily interaction with other cultures, and 4) Marginalization- individuals who have little interest in their own cultural identity or interacting with other cultures.

Farver and Lee-Shin (2000) developed a median split procedure using two linear measures, the Suinn-Lew Asian Self-Identity Acculturation Scale and the Bicultural Involvement Questionnaire, to represent both “bi-dimensional” levels needed in Berry’s model. They categorized individuals into “high” and “low” levels of biculturalism and cultural involvement. Using these two scores, individuals were categorized into one of four acculturation groups: integrated (“high” biculturalism and “high” cultural involvement), assimilated (“high” biculturalism and “low” cultural involvement), separated (“low” biculturalism and “high” cultural involvement), or marginalized (“low” biculturalism and “low” cultural involvement).

Based on previous work by Ward and Rana-Deuba (1999) using the Acculturation Index, Zheng, Sang, and Wang (2003) adapted the Acculturation Index to measure identification with “host culture” and “culture of origin” in a group of Chinese undergraduate and graduate students living in Australia. They subjected the participants’ scores (host culture and culture of origin) to a median split procedure in order to create four acculturation groups: integrated, assimilated, separated, and marginalized.

Using Farver & Lee-Shin’s (2000) previously described median split procedure, Farver, Bhadha, and Narang (2002) measured acculturation, using an adapted version of the Bicultural Involvement Questionnaire, in a group of United States born Asian Indian adolescents. The

median split procedure was utilized to classify the adolescents into “high” and “low” levels of American involvement and Indian involvement, and the adolescents were categorized into one of four acculturation groups: integrated, assimilated, separated, or marginalized.

The current study utilized two linear scales to measure affiliation with the ethnic society and affiliation with the dominant society in order to represent both dimensions in Berry’s model (Berry, 1970; Berry, 1974; Berry, 1984; Berry, 1999). Affiliation with the ethnic society was measured using the Ethnic Society Immersion (ESI) subscale of the Stephenson Multigroup Acculturation Scale (SMAS). Affiliation with the dominant society was measured using the Dominant Society Immersion (DSI) subscale of the Stephenson Multigroup Acculturation Scale (SMAS). A median split procedure was employed classifying participants as “high” and “low” on ethnic society immersion and dominant society immersion. Using these two scores, participants were categorized into one of the four acculturation groups: integrated (“high” DSI and “high” ESI), assimilated (“high” DSI and “low” ESI), separated (“low” DSI and “high” ESI), or marginalized (“low” DSI and “low” ESI).

This study also focused on adults who have ASA problems sufficiently severe to have warranted professional intervention. This subgroup of individuals with ASA problems constitute a cohort of users whose initial experimentation or recreational use of alcohol and illicit substances clearly led to addiction. Understanding the dynamics related to serious alcohol and substance addiction, and to the abusers’ success (or failure) of treatment is highly critical from any perspective. In essence, examining ethnic identity, acculturative type, and acculturative stress in relation to ASA among Hispanic and African Americans may broaden our understanding of the relative roles these variables play in ASA among these two ethnic groups, especially with respect to predicting treatment for ASA and addiction.

As part of the prediction of treatment outcome for ASA, other variables were included in the model because of their known relation with substance treatment outcome. They included: age, perceived childhood family cohesion and conflict, therapist-client alliance, general stress stemming from current stressors, symptoms of psychopathology, and social support. Further, additional variables that were considered in the analysis are: age of first usage of alcohol or illicit substance, length of usage, length of treatment, and degree of cumulative effects or consequences from current drug abuse.

In this study, treatment outcome was defined by the number of ASA consequences (e.g., missing school or work; engaging in risky behavior) experienced by the participants at the end of an eight-week period. If treatment of ASA was relatively effective, the number of consequences resulting from ASA behaviors should be relatively low. Conversely, if treatment of ASA was relatively ineffective, the consequences resulting from ASA behaviors should be relatively high. In this regard, treatment outcome was treated as a continuous variable. Additionally, the number of consequences of ASA was measured at the beginning of treatment in reference to the past eight-week period, in order to have a base line measure of consequences of comparable length of time. Being able to compare the extent of pre-treatment ASA consequences with post-8-week treatment consequences provided an additional measure of treatment success (or lack thereof).

The second broad goal of the current study was to test various theoretically-driven hypotheses. They are:

Hypothesis #1: Acculturative type would correlate with psychiatric symptoms. Based on Berry's Bidimensional Acculturation Model (Berry, 1970; Berry, 1974; Berry, 1984; Berry, 1999) and previous research findings (Berry, 1999; Berry & Sam, 1997; Kohbod, 1997; Neff & Hoppe, 1993; Padilla, Wagatsuma, & Lindholm, 1985; Shibazaki, 1999; Sundquist, Bayard-

Burfield, Johansson, & Johansson, 2000), it was hypothesized that Hispanic and African American participants who have integrated acculturative types would report having the least number of psychiatric symptoms; those who have assimilated or separated acculturative types would report having moderate amounts of psychiatric symptoms; and those who have marginalized acculturative types would report having the highest number of psychiatric symptoms.

Hypothesis #2: Acculturative type would correlate with ASA treatment outcome, as measured by ASA consequences, after an 8-week period of treatment. Specifically, participants who have integrated acculturative types would report experiencing the least ASA consequences; those who have assimilated or separated acculturative types would report experiencing moderate numbers of ASA consequences; and those who have marginalized acculturative types would report experiencing the most ASA consequences.

Hypothesis #3: Based on the rationale that individuals with relatively well-established acculturative types should either experience less acculturative stress or be better prepared psychoemotionally to deal with such stress, it was hypothesized that acculturative type would correlate with acculturative stress. Specifically, participants with integrated acculturative types would report the least acculturative stress; those with assimilated or separated acculturative types would report moderate amounts of acculturative stress; and those with marginalized acculturative types would report the most acculturative stress.

Hypothesis #4: It was hypothesized that acculturative stress would correlate with ASA treatment outcome, as measured by consequences related to ASA. This hypothesis was tested twice: once at the commencement of treatment, and at the end of an 8-week period.

CHAPTER THREE: METHODOLOGY

Participants

Participants in this study were 101 Hispanic and 171 African American individuals receiving outpatient ASA treatment services at a comprehensive, community-based, ASA treatment facility in a tri-county area in Central Florida. All participants were at least 18 years of age ($M = 38.47$, range = 18-61) and varied on demographic characteristics, including ethnicity.

Measures

All participants completed the following:

- (1) A consent form describing the general purpose of the study and informing the participants of their rights as research participants.
- (2) A demographic sheet asking the participant's age, gender, ethnicity, marital status, and employment status.
- (3) The Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992). The MEIM is a 12-item self-report questionnaire designed to assess an individual's level of ethnic identity to their ethnic group. It can be administered individually or to groups, and takes approximately 5 minutes to complete. In addition to an overall ethnic identity score, the MEIM also provides two subscale scores

including 1) Ethnic Identity Search (EIS), and 2) Affirmation, Belonging, and Commitment (ABC). Each MEIM item is a statement that the participant responds to on a 4 point Likert scale ranging from “strongly agree” to “strongly disagree.” Original normative data for the MEIM were derived from a sample of 134 Asian American, 131 African American, 89 Hispanic, 12 White, and 41 mixed background high school students (aged 14-29 yrs) and 58 Hispanic, 35 Asian, 23 White, 11 Black, 1 American Indian, and 8 mixed background college students (aged 18-34 yrs). The MEIM has Cronbach coefficients that range from .81 for the high school sample to .90 for the college sample. For additional information about the development and psychometric properties of the MEIM, see (Phinney, 1992). See Appendix A for the complete MEIM measure. In the current study, the Cronbach coefficients for the MEIM were .89 for the combined ethnic groups, .86 for the African American group, and .92 for the Hispanic group. The Cronbach coefficients for the EIS subscale of the MEIM were .72 for the combined ethnic groups, .70 for the African American group, and .73 for the Hispanic group. The Cronbach coefficients for the ABC subscale of the MEIM were .86 for the combined ethnic groups, .82 for the African American group, and .90 for the Hispanic group.

- (4) Stephenson Multigroup Acculturation Scale (SMAS; Stephenson, 2000). The SMAS is a 32-item self-report questionnaire designed to assess an individual’s level of acculturation. It can be administered individually or to groups, and takes approximately 10 minutes to complete. In addition to an overall

acculturation score, the SMAS also provides two subscale scores including 1) Ethnic Society Immersion (ESI), and 2) Dominant Society Immersion (DSI). Each SMAS item is a statement that the participant responds to on a 4 point Likert scale ranging from “true” to “false.” Normative data for the SMAS were derived from a sample of 436 individuals recruited from diverse ethnic backgrounds. The SMAS has Cronbach coefficients that range from .86 for entire scale; .97 for ESI; and .90 for DSI. For additional information about the development and psychometric properties of the SMAS, see (Stephenson, 2000). See Appendix B for the complete SMAS measure. In the current study, the Cronbach coefficients for the SMAS were .92 for the combined ethnic groups, .92 for the African American group, and .93 for the Hispanic group. The Cronbach coefficients for the DSI subscale of the SMAS were .85 for the combined ethnic groups, .83 for the African American group, and .87 for the Hispanic group. The Cronbach coefficients for the ESI subscale of the SMAS were .91 for the combined ethnic groups, .91 for the African American group, and .92 for the Hispanic group.

- (5) Social, Attitudinal, Familial, and Environmental Acculturative Stress Scale (SAFE; Mena, Padilla, & Maldonado, 1987). The S.A.F.E. is a 24-item self-report questionnaire designed to assess an individual’s level of acculturative stress. It can be administered individually or to groups, and takes approximately 7 minutes to complete. In addition to an overall acculturative stress score, the S.A.F.E. also provides four subscales, including 1) Social, 2) Attitudinal, 3) Familial, and 4) Environmental. Each S.A.F.E. item is a

statement that participants respond to on a 5 point Likert scale from “not stressful” to “extremely stressful.” Normative data for the S.A.F.E. was derived from a sample of 141 Hispanic immigrant students (Fuertes & Westbrook, 1996). The S.A.F.E. has Cronbach coefficients that range from .89 for the entire scale, .88 for Environmental, .73 for Attitudinal, .71 for Social, and .70 for Family. For additional information about the development and psychometric properties of the S.A.F.E., see (Mena, et. al., 1987). See Appendix C for the complete S.A.F.E. measure. In the current study, the Cronbach coefficients for the S.A.F.E. were .95 for the combined ethnic groups, .94 for the African American group, and .96 for the Hispanic group. The Cronbach coefficients for the Social subscale of the S.A.F.E. were .84 for the combined ethnic groups, .83 for the African American group, and .83 for the Hispanic group. The Cronbach coefficients for the Attitudinal subscale of the S.A.F.E. were .79 for the combined ethnic groups, .77 for the African American group, and .81 for the Hispanic group. The Cronbach coefficients for the Familial subscale of the S.A.F.E. were .80 for the combined ethnic groups, .77 for the African American group, and .81 for the Hispanic group. The Cronbach coefficients for the Environmental subscale of the S.A.F.E. were .88 for the combined ethnic groups, .78 for the African American group, and .94 for the Hispanic group.

- (6) The Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983). The BSI is a 53-item self-report questionnaire designed to assess an individual’s level of psychopathology. It can be administered individually or to groups,

and takes approximately 12 minutes to complete. In addition to an overall psychopathology score, the BSI also provides nine subscale scores including 1) Somatization, 2) Obsessive-Compulsive, 3) Interpersonal Sensitivity, 4) Depression, 5) Anxiety, 6) Hostility, 7) Phobic Anxiety, 8) Paranoid Ideation, and 9) Psychoticism. Each BSI item is a statement that the participant responds to on a 5 point Likert scale. Normative data for the BSI were derived from a sample of 501 psychiatric patients. The BSI has Cronbach coefficients that range from .85 for Somatization, .87 for Obsessive-Compulsive, .79 for Interpersonal Sensitivity, .89 for Depression, .86 for Anxiety, .78 for Hostility, .79 for Phobic Anxiety, .79 for Paranoid Ideation, and .75 for Psychoticism. For additional information about the development and psychometric properties of the BSI, see (Derogatis & Melisaratos, 1983). See Appendix D for the complete measure. In the current study, the Cronbach coefficients for the BSI were .98 for the combined ethnic groups, .98 for the African American group, and .99 for the Hispanic group. The Cronbach coefficients for the Somatization subscale of the BSI were .90 for the combined ethnic groups, .89 for the African American group, and .91 for the Hispanic group. The Cronbach coefficients for the Obsessive-Compulsive subscale of the BSI were .92 for the combined ethnic groups, .85 for the African American group, and .95 for the Hispanic group. The Cronbach coefficients for the Interpersonal Sensitivity subscale of the BSI were .90 for the combined ethnic groups, .83 for the African American group, and .93 for the Hispanic group. The Cronbach coefficients for the Depression subscale of

the BSI were .91 for the combined ethnic groups, .87 for the African American group, and .93 for the Hispanic group. The Cronbach coefficients for the Anxiety subscale of the BSI were .92 for the combined ethnic groups, .89 for the African American group, and .93 for the Hispanic group. The Cronbach coefficients for the Hostility subscale of the BSI were .86 for the combined ethnic groups, .80 for the African American group, and .90 for the Hispanic group. The Cronbach coefficients for the Phobic Anxiety subscale of the BSI were .87 for the combined ethnic groups, .79 for the African American group, and .93 for the Hispanic group. The Cronbach coefficients for the Paranoid Ideation subscale of the BSI were .77 for the combined ethnic groups, .78 for the African American group, and .74 for the Hispanic group. The Cronbach coefficients for the Psychoticism subscale of the BSI were .83 for the combined ethnic groups, .77 for the African American group, and .86 for the Hispanic group.

- (7) The Inventory of Drug Use Consequences (InDUC; Tonigan & Miller, 2002). The InDUC is a 50-item self-report questionnaire designed to assess an individual's adverse consequences to substance use. It can be administered individually or to groups, and takes approximately 15 minutes to complete. In addition to an overall Consequences score, the InDUC also provides five subscale scores including 1) Impulse Control, 2) Social Responsibility, 3) Physical, 4) Interpersonal, and 5) Intrapersonal domains. Each InDUC item is a statement that the participant responds to with "no" or "yes." Normative data for the InDUC were derived from a sample of 208 substance abuse clients. The

InDUC has test-retest reliabilities that range from .92 for Impulse Control, .88 for Social Responsibility, .68 for Physical, .73 for Interpersonal, and .33 for Intrapersonal. For additional information about the development and psychometric properties of the InDUC, see (Tonigan & Miller, 2002). See Appendix E for the complete measure. In the current study, the Cronbach coefficients for the InDUC at baseline were .97 for the combined ethnic groups, .97 for the African American group, and .96 for the Hispanic group. The Cronbach coefficients for the Impulse Control subscale of the InDUC at baseline were .85 for the combined ethnic groups, .87 for the African American group, and .82 for the Hispanic group. The Cronbach coefficients for the Social Responsibility subscale of the InDUC at baseline were .85 for the combined ethnic groups, .86 for the African American group, and .84 for the Hispanic group. The Cronbach coefficients for the Physical subscale of the InDUC at baseline were .85 for the combined ethnic groups, .86 for the African American group, and .82 for the Hispanic group. The Cronbach coefficients for the Interpersonal subscale of the InDUC at baseline were .86 for the combined ethnic groups, .86 for the African American group, and .85 for the Hispanic group. The Cronbach coefficients for the Intrapersonal subscale of the InDUC at baseline were .84 for the combined ethnic groups, .87 for the African American group, and .79 for the Hispanic group. The Cronbach coefficients for the InDUC at outcome were .98 for the combined ethnic groups, .98 for the African American group, and .97 for the Hispanic group. The Cronbach coefficients for the Impulse Control subscale of the

InDUC at outcome were .89 for the combined ethnic groups, .91 for the African American group, and .86 for the Hispanic group. The Cronbach coefficients for the Social Responsibility subscale of the InDUC at outcome were .90 for the combined ethnic groups, .92 for the African American group, and .86 for the Hispanic group. The Cronbach coefficients for the Physical subscale of the InDUC at outcome were .90 for the combined ethnic groups, .92 for the African American group, and .87 for the Hispanic group. The Cronbach coefficients for the Interpersonal subscale of the InDUC at outcome were .90 for the combined ethnic groups, .91 for the African American group, and .88 for the Hispanic group. The Cronbach coefficients for the Intrapersonal subscale of the InDUC at outcome were .91 for the combined ethnic groups, .93 for the African American group, and .88 for the Hispanic group.

- (8) The Social Readjustment Rating Scale (SRRS; Holmes & Rahe, 1967). The SRRS consists of 43 life events that are often reported as stressful. Respondents are asked to endorse those items they have experienced in the last 12 months. Seventeen events are rated as desirable (i.e. vacation, marriage), eighteen are rated as undesirable (i.e. death of a loved one, divorce), and eight are rated as neutral events (i.e. change in working conditions, change in living environment). Each event has been weighted according to the amount of stress it produced in the norming population, with death of a spouse being the most stressful event and Christmas as being the least stressful event (Scully, Tosi, & Banning, 2000). The SRRS takes

approximately ten minutes to complete. The SRRS was included to serve as a control against the influence of non-acculturative stressors. See Appendix F for the complete measure. In the current study, the Cronbach coefficients for the SRRS were .90 for the combined ethnic groups, .91 for the African American group, and .85 for the Hispanic group.

- (9) Family Environment Scale (FES; Moos, 1974; Moos & Moos, 1994). The FES is a 90-item, true-false self-report measure intended to assess the actual, preferred, or expected social environment of families. A modified version of the FES was used in this study whereby respondents were instructed to respond to items in reference to their childhood family of origins; consistent with previous adaptations of this measure (Moos & Moos), items were rewritten in the past tense in order to accommodate respondents' retrospective assessment of their childhood family. The FES contains ten subscales assessing three sets of underlying domains or dimensions related to the respondent's family social climate. For the present study, two subscales, *Cohesion* and *Conflict*, from the Relationship dimensions were administered to the participants. These subscales assess the degree of commitment, help, and support family members provide to one another, and the degree of conflicts occurring within the family. Initial internal consistency (Cronbach alpha) for the Cohesion and Conflict scales reported in the manual (Moos & Moos, 1994) were .78 and .75, respectively. Negy and Snyder (under review) found that when used in a retrospective manner for appraising childhood family-of-origin, Cohesion and Conflict subscales had Cronbach alphas of .78

and .82, respectively. See Appendix G for the complete measure. In the current study, the Cronbach coefficients for the Family Cohesion subscale were .66 for the combined ethnic groups, .53 for the African American group, and .75 for the Hispanic group. The Cronbach coefficients for the Family Conflict subscale were .69 for the combined ethnic groups, .57 for the African American group, and .75 for the Hispanic group.

- (10) Working Alliance Inventory (WAI; Horvath & Greenburg, 1989). The WAI is a 12-item self-report questionnaire designed to assess the quality of the therapist-client alliance. It is to be administered individually, and takes approximately 5 minutes to complete. In addition to an overall Alliance score, the WAI also provides three subscale scores, including 1) Task, 2) Bond, and 3) Goal. Each WAI item is a statement that the participant responds to on a 4 point Likert scale ranging from “true” to “false.” Normative data for the WAI were derived from three separate studies. The WAI has Cronbach coefficients that range from .93 for the overall Alliance scale, .92 for the Task scale, .89 for the Bond scale, and .92 for the Goal scale. For additional information about the development and psychometric properties of the WAI, see (Horvath & Greenberg, 1989). See Appendix H for the complete measure. In the current study, the Cronbach coefficients for the WAI were .96 for the combined ethnic groups, .95 for the African American group, and .98 for the Hispanic group. The Cronbach coefficients for the Task subscale of the WAI were .93 for the combined ethnic groups, .90 for the African American group, and .96 for the Hispanic group. The Cronbach coefficients for the Bond

subscale of the WAI were .95 for the combined ethnic groups, .94 for the African American group, and .96 for the Hispanic group. The Cronbach coefficients for the Goal subscale of the WAI were .84 for the combined ethnic groups, .80 for the African American group, and .89 for the Hispanic group.

- (11) The Multidimensional Scale of Perceived Social Support (MSPSS; Dahlem, Zimet, & Walker, 1991). Social support was assessed using the 12-item MSPSS to determine the students' perception of social support from three distinct groups: family, friends, and significant other. Each item is responded to on a 7 point Likert scale ranging from "very strongly disagree" to "very strongly agree." The MSPSS takes about 5 minutes to complete. Normative data for the MSPSS were derived from a study by Dahlem, Zimet, and Walker based on scores from 154 students at an urban college. The MSPSS obtained Cronbach coefficients of internal consistency ranging from .90 to .95; Full scale was .91, Family scale was .90, Friends scale was .94, and Significant Other scale was .95. For additional information about the development and psychometric properties of the MSPSS, see (Dahlem, Zimet, and Walker, 1991). See Appendix I for the complete measure. In the current study, the Cronbach coefficients for the MSPSS were .92 for the combined ethnic groups, .93 for the African American group, and .92 for the Hispanic group. The Cronbach coefficients for the Family subscale of the MSPSS were .94 for the combined ethnic groups, .89 for the African American group, and .98 for the Hispanic group. The Cronbach coefficients for the Friend subscale of the

MSPSS were .89 for the combined ethnic groups, .87 for the African American group, and .94 for the Hispanic group. The Cronbach coefficients for the Significant Other subscale of the MSPSS were .87 for the combined ethnic groups, .91 for the African American group, and .80 for the Hispanic group.

Procedures

Data collection was tailored for each individual data collection site to ensure the least amount of intrusion into normal operating procedures. Staff members were identified who could provide information regarding likely participant recruitment times (e.g., right before or after groups, clinic times). All participants were informed (during the informed consent procedure) about the requirements of the study, including the survey nature of the materials and the amount of reading required. The participants self-identified themselves as Hispanic, African American, or Other during the informed consent process. Only those participants who identified themselves as Hispanic or African American were used in the analyses. If they self-identified as multi-racial, they were considered Other. There was no separation among different cultural groups within the broad categories of Hispanic and African American, primarily because there was no previous research to support a more detailed analysis of within group differences among Hispanics or African Americans in relation to substance abuse treatment outcomes. The current study was exploratory in that regard, due to the rather limited attention this topic has received thus far. Dominant culture was defined as mainstream American culture.

The data was collected in both group and individual settings, over a nearly 12-month period (approximately November 2004 through October 2005). Informed consent was explained to each participant in person, if possible. A small number of people at each site were identified as the primary on-site contact person for participants (e.g., to pick-up or drop-off surveys with, collect incentives from). All participants were provided with the principal investigator's contact information to facilitate resolution of any questions. Also, participants were allowed to take surveys home and return them to their respective clinic locations. This was helpful in recruiting clients who could not remain at the clinic to complete the questionnaires.

CHAPTER FOUR: FINDINGS

In order to determine whether the integrated, separated, assimilated, and marginalized groups differed significantly from one another on demographic variables, a multivariate analysis of variance (MANOVA) was performed with acculturative type as the independent variable (IV) and age, gender, ethnicity, marital status, employment status, age of first alcohol use, years of regular alcohol use, age of first drug use, years of regular drug use, life stress (as measured by the SRRS), social support (as measured by the MSPSS), family cohesion (as measured by the Cohesion subscale of the FES), family conflict (as measured by the Conflict subscale of the FES), therapeutic alliance (as measured by the WAI), and substance use consequences (as measured by the InDUC at baseline) as the dependent variables (DVs).

Acculturative type was associated with a significant effect on the demographic variables (using Wilks' Lambda, $F [45, 755.35] = 2.92, p < .001$). Univariate analyses indicated a significant effect for age ($F [3, 268] = 6.50, p < .001$), ethnicity ($F [3, 268] = 3.50, p < .05$), marital status ($F [3, 268] = 6.19, p < .001$), age of first alcohol use ($F [3, 268] = 4.51, p < .01$), years of regular alcohol use ($F [3, 268] = 3.58, p < .05$), years of regular drug use ($F [3, 268] = 3.66, p < .05$), social support ($F [3, 268] = 3.40, p < .05$), family conflict ($F [3, 268] = 3.54, p < .05$), therapeutic alliance ($F [3, 268] = 5.05, p < .01$), and substance use consequences at baseline ($F [3, 268] = 4.98, p < .01$). No significant differences between the acculturative type groups were found on gender ($F [3, 268] = 1.53, ns$), employment ($F [3, 268] = 2.06, ns$), age of first drug use ($F [3, 268] = 0.55, ns$), life stress ($F [3, 268] = 2.03, ns$), and family cohesion ($F [3, 268] = 1.33, ns$).

Tukey post-hoc tests revealed that assimilated individuals ($M = 33.55$, $SD = 10.07$) were more likely to be younger than integrated individuals ($M = 40.98$, $SD = 8.96$, $p < .001$).

Marginalized individuals ($M = 1.27$, $SD = 0.45$) were more likely to be African American while separated individuals ($M = 1.54$, $SD = 0.51$, $p < .05$) were more likely to be Hispanic. Integrated individuals ($M = 2.60$, $SD = 1.38$) were more likely to be married than assimilated individuals ($M = 1.75$, $SD = 1.26$, $p < .01$) and marginalized individuals ($M = 1.91$, $SD = 1.40$, $p < .01$).

Integrated individuals ($M = 11.87$, $SD = 7.46$) were more likely to first use alcohol at a younger age than assimilated individuals ($M = 15.70$, $SD = 5.12$, $p < .05$) and marginalized individuals ($M = 14.80$, $SD = 7.06$, $p < .05$). Marginalized individuals ($M = 15.71$, $SD = 11.53$) were more likely to have more years of regular alcohol use than assimilated individuals ($M = 9.25$, $SD = 9.88$, $p < .05$). Marginalized individuals ($M = 15.63$, $SD = 12.16$) were more likely to have more years of regular drug use than separated individuals ($M = 8.92$, $SD = 11.09$, $p < .05$).

Assimilated individuals ($M = 0.31$, $SD = 1.09$) were more likely to have positive social support than marginalized individuals ($M = -0.23$, $SD = 0.92$, $p < .05$). Marginalized individuals ($M = 0.24$, $SD = 0.68$) were more likely to have family conflict than integrated individuals ($M = -0.15$, $SD = 1.18$, $p < .05$). Marginalized individuals ($M = -0.28$, $SD = 0.78$) were more likely to have poorer therapeutic relationships with their counselors than integrated individuals ($M = 0.17$, $SD = 1.02$, $p < .01$) and separated individuals ($M = 0.38$, $SD = 1.10$, $p < .05$). Integrated individuals ($M = 0.10$, $SD = 1.11$) were more likely to experience substance use consequences at baseline than assimilated individuals ($M = -0.55$, $SD = 1.09$, $p < .01$). Marginalized individuals ($M = 0.11$, $SD = 0.69$) were more likely to experience substance use consequences at baseline than assimilated individuals ($M = -0.55$, $SD = 1.09$, $p < .01$). No other specific post-hoc contrasts were significant. As a result, the variables on which the four acculturative types significantly

differed (age, ethnicity, marital status, age of first alcohol use, years of regular alcohol use, years of regular drug use, social support, family conflict, therapeutic alliance, and substance use consequences at baseline) were treated as covariates in subsequent analyses.

In order to test the first hypothesis, which was that participants who have integrated acculturative types would report having the least number of psychiatric symptoms; those who have assimilated or separated acculturative types would report having moderate amounts of psychiatric symptoms; and those who have marginalized acculturative types would report having the highest number of psychiatric symptoms, a multivariate analysis of covariance (MANCOVA) was performed with acculturative type (integrated, separated, assimilated, and marginalized) as the IV and the subscales of the BSI (Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism) as the DVs. Age, ethnicity, marital status, age of first alcohol use, years of regular alcohol use, years of regular drug use, social support, family conflict, therapeutic alliance, and substance use consequences at baseline served as covariates.

Acculturative type was associated with a significant effect on the BSI, ($F [27, 730.77] = 2.49, p < .001; \eta_p^2 = .082$). Univariate analyses indicated significant differences between the acculturative type groups on Somatization ($F [3, 258] = 8.95, p < .001$), Depression ($F [3, 258] = 4.06, p < .01$), Anxiety ($F [3, 258] = 3.60, p < .05$), Hostility ($F [3, 258] = 5.88, p < .01$), Phobic Anxiety ($F [3, 258] = 4.76, p < .01$), and Psychoticism ($F [3, 258] = 5.39, p < .01$). No differences were found on Obsession-Compulsion ($F [3, 258] = 2.46, ns$), Interpersonal Sensitivity ($F [3, 58] = 1.78, ns$), or Paranoid Ideation ($F [3, 258] = 1.81, ns$).

Tukey post-hoc tests revealed that marginalized individuals ($M = 0.31, SD = 0.88$) were more likely to have higher scores on Somatization than integrated individuals ($M = -0.05, SD =$

1.13, $p < .05$) and assimilated individuals ($M = -0.48$, $SD = 0.72$, $p < .001$). Marginalized individuals ($M = 0.10$, $SD = 0.78$) were more likely to have higher scores on Depression than assimilated individuals ($M = -0.50$, $SD = 0.78$, $p < .01$). Separated individuals ($M = 0.32$, $SD = 1.03$) were more likely to have higher scores on Depression than assimilated individuals ($M = -0.50$, $SD = 0.78$, $p < .01$). Integrated individuals ($M = 0.21$, $SD = 1.17$) were more likely to have higher scores on Depression than assimilated individuals ($M = -0.50$, $SD = 0.78$, $p < .05$).

Marginalized individuals ($M = 0.76$, $SD = 0.78$) were more likely to have higher scores on Anxiety than assimilated individuals ($M = -0.50$, $SD = 0.74$, $p < .05$). Separated individuals ($M = 0.29$, $SD = 1.07$) were more likely to have higher scores on Anxiety than assimilated individuals ($M = -0.50$, $SD = 0.74$, $p < .01$). Integrated individuals ($M = 0.05$, $SD = 1.17$) were more likely to have higher scores on Anxiety than assimilated individuals ($M = -0.50$, $SD = 0.74$, $p < .05$).

Marginalized individuals ($M = 0.18$, $SD = 0.83$) were more likely to have higher scores on Hostility than assimilated individuals ($M = -0.57$, $SD = 0.73$, $p < .001$). Separated individuals ($M = 0.13$, $SD = 1.03$) were more likely to have higher scores on Hostility than assimilated individuals ($M = -0.57$, $SD = 0.73$, $p < .05$). Integrated individuals ($M = 0.02$, $SD = 1.14$) were more likely to have higher scores on Hostility than assimilated individuals ($M = -0.57$, $SD = 0.73$, $p < .01$).

Marginalized individuals ($M = 0.10$, $SD = 0.74$) were more likely to have higher scores on Phobic Anxiety than assimilated individuals ($M = -0.54$, $SD = 0.72$, $p < .01$).

Separated individuals ($M = 0.17$, $SD = 0.97$) were more likely to have higher scores on Phobic Anxiety than assimilated individuals ($M = -0.54$, $SD = 0.72$, $p < .05$). Integrated individuals ($M = 0.07$, $SD = 1.21$) were more likely to have higher scores on Phobic Anxiety than assimilated individuals ($M = -0.54$, $SD = 0.72$, $p < .01$).

Marginalized individuals ($M = 0.14$, $SD = 0.85$) were more likely to have higher scores on Psychoticism than assimilated individuals ($M = -0.51$,

SD = 0.75, $p < .01$). Separated individuals ($M = 0.32$, SD = 1.09) were more likely to have higher scores on Psychoticism than assimilated individuals ($M = -0.51$, SD = 0.75, $p < .01$). Integrated individuals ($M = -0.02$, SD = 1.12) were more likely to have higher scores on Psychoticism than assimilated individuals ($M = -0.51$, SD = 0.75, $p < .05$). No other specific post-hoc contrasts were significant.

Overall, the first hypothesis was partially supported. Integrated participants and assimilated participants did, indeed, have lower scores on measures of psychopathology than marginalized participants and separated participants. Surprisingly, assimilated participants had lower scores on all of the BSI subscales than integrated participants.

In order to test the second hypothesis, which was that participants who have integrated acculturative types would report having the least alcohol and substance abuse (ASA) consequences at outcome; those who have assimilated or separated acculturative types would report having moderate ASA consequences; and those who have marginalized acculturative types would report having the most ASA consequences, an analysis of covariance (ANCOVA) was performed with acculturative type (integrated, separated, assimilated, and marginalized) as the IV and the scores on the InDUC at outcome as the DV. Age, ethnicity, marital status, age of first alcohol use, years of regular alcohol use, years of regular drug use, social support, family conflict, therapeutic alliance, and substance use consequences at baseline served as covariates. Acculturative type was not associated with a significant effect on the InDUC, ($F [3, 122] = 2.28$, ns ; $\eta_p^2 = .053$).

Overall, the second hypothesis was not supported. This may have been partially due to a smaller sample size at outcome ($N = 136$) compared to the initial sample at baseline ($N = 272$).

In order to test the third hypothesis, which was that participants who have integrated acculturative types would report having the least acculturative stress; those who have assimilated or separated acculturative types would report having moderate amounts of acculturative stress; and those who have marginalized acculturative types would report having the highest amount of acculturative stress, a multivariate analysis of covariance (MANCOVA) was performed with acculturative type (integrated, separated, assimilated, and marginalized) as the IV and the subscales of the S.A.F.E (Social, Attitudinal, Familial, and Environmental) as the DVs. Age, ethnicity, marital status, age of first alcohol use, years of regular alcohol use, years of regular drug use, social support, family conflict, therapeutic alliance, and substance use consequences at baseline served as covariates.

Acculturative type was associated with a significant effect on the S.A.F.E. ($F [12, 674.96] = 2.85, p < .01; \eta_p^2 = .043$). Univariate analyses indicated significant differences between the acculturative type groups on the Social scale ($F [3, 258] = 7.94, p < .001$), Attitudinal scale ($F [3, 258] = 3.26, p < .05$), and Familial scale ($F [3, 258] = 4.80, p < .01$). No differences were found on the Environmental scale ($F [3, 258] = 2.58, ns$).

Tukey post-hoc tests revealed that marginalized individuals ($M = 0.30, SD = 0.91$) were more likely to have higher scores on the Social subscale than integrated individuals ($M = -0.11, SD = 1.07, p < .05$) and assimilated individuals ($M = -0.49, SD = 0.83, p < .001$). Marginalized individuals ($M = 0.14, SD = 0.83$) were more likely to have higher scores on the Attitudinal subscale than assimilated individuals ($M = -0.37, SD = 0.90, p < .05$). Marginalized individuals ($M = 0.23, SD = 0.86$) were more likely to have higher scores on the Familial subscale than assimilated individuals ($M = -0.33, SD = 0.92, p < .05$). No other specific post-hoc contrasts were significant.

Overall, the third hypothesis was partially supported. Assimilated participants had lower scores on the S.A.F.E. subscales than marginalized participants. Surprisingly, though, assimilated participants had lower scores (although not statistically significant) on the Social subscale than integrated participants.

In order to test the fourth hypothesis that participants with higher levels of acculturative stress would experience more substance use consequences at baseline than participants with lower levels of acculturative stress, a multiple regression was performed with the subscales of the S.A.F.E. as the predictor variables and InDUC scores at baseline as the criterion variable. Acculturative stress did significantly predict the InDUC score at baseline (Adjusted $R^2 = 0.11$, $F [4, 267] = 9.58$, $p < .001$). Univariate analyses indicated a significant effect for the Environmental subscale ($t = 2.03$, $p < .05$). Bivariate correlation analysis indicated a significant positive correlation between the Environmental subscale and the InDUC at baseline ($r = 0.34$, $p < .001$). No significant differences were found on the Social scale ($t = 1.61$, ns), the Attitudinal scale ($t = -0.72$, ns), or the Familial scale ($t = -0.00$, ns).

In order to test the fourth hypothesis that participants with higher levels of acculturative stress would experience more substance use consequences at outcome than participants with lower levels of acculturative stress, a multiple regression was performed with the subscales of the S.A.F.E. as the predictor variables and InDUC scores at two months as the criterion variable. Acculturative stress scores did not significantly predict InDUC score at two months (Adjusted $R^2 = 0.01$, $F [4, 131] = 1.31$, ns).

Overall, the fourth hypothesis was partially supported at baseline, but was not supported at outcome. This may have been partially due to a smaller sample size at outcome ($N = 136$) compared to the initial sample at baseline ($N = 272$).

In order to determine if dominant society immersion would correlate with acculturative stress, a multiple regression was performed with the subscales of the S.A.F.E (Social, Attitudinal, Familial, and Environmental) as the predictor variables and dominant society immersion (DSI) as the criterion variable. The acculturative stress subscales did significantly predict DSI (Adjusted $R^2 = 0.13$, $F [4, 267] = 10.86$, $p < .001$). Univariate analyses indicated that the Social scale ($t = -4.90$, $p < .001$) and the Environmental scale ($t = 2.85$, $p < .01$) of the S.A.F.E. was a significant predictor of DSI. Bivariate correlation analyses indicated that the more participants were acculturated toward the dominant society, the less stress they experienced in a social setting ($r = -0.31$, $p < .001$) and an environmental setting ($r = -0.16$, $p < .05$). No significant differences were found on Attitudinal scale ($t = 0.51$, ns) or the Familial scale ($t = -1.56$, ns).

In order to determine if ethnic society immersion would correlate with acculturative stress, a multiple regression was performed with the subscales of the S.A.F.E (Social, Attitudinal, Familial, and Environmental) as the predictor variables and ethnic society immersion (ESI) as the criterion variable. The acculturative stress subscales did not significantly predict ESI (Adjusted $R^2 = -0.02$, $F [4, 267] = 2.09$, ns).

In order to determine whether therapeutic alliance would positively correlate with treatment outcome, a partial Pearson product-moment correlational analysis was conducted between therapeutic alliance scores and InDUC scores at outcome, controlling for InDUC scores at baseline. Therapeutic alliance scores and InDUC scores were not significantly correlated with one another ($r = -.05$, ns).

In order to determine whether ethnicity would correlate with acculturative stress, a multivariate analysis of variance (MANOVA) was performed with ethnicity (Hispanic versus African American) as the IV and the subscales of the S.A.F.E (Social, Attitudinal, Familial, and Environmental) as the DVs.

Ethnicity was associated with a significant effect on the S.A.F.E. ($F [4, 267] = 5.36, p < .001; \eta_p^2 = .074$). Univariate analyses indicated significant differences between African Americans and Hispanics on the Social scale ($F [1, 270] = 13.90, p < .001$), Attitudinal scale ($F [1, 270] = 10.88, p < .01$), Familial scale ($F [1, 270] = 3.92, p < .05$), and Environmental scale ($F [1, 270] = 16.19, p < .001$).

Hispanics had significantly higher SAFE Social scale scores ($M_s = 16.00, SD = 6.15$) than African Americans ($M_s = 13.25, SD = 5.71$). Hispanics had significantly higher SAFE Attitudinal scale scores ($M_s = 13.83, SD = 5.49$) than African Americans ($M_s = 11.76, SD = 4.70$). Hispanics had significantly higher SAFE Familial scale scores ($M_s = 12.73, SD = 4.92$) than African Americans ($M_s = 11.54, SD = 4.75$). Hispanics had significantly higher SAFE Environmental scale scores ($M_s = 14.49, SD = 6.89$) than African Americans ($M_s = 11.67, SD = 4.62$).

Analyses by Ethnicity

In order to determine whether African Americans' and Hispanics' results differed on the research hypotheses, separate analyses were conducted for both ethnic groups.

African Americans

In order to determine whether the integrated, separated, assimilated, and marginalized African American groups differed significantly from one another on demographic variables, a MANOVA was performed with acculturative type as the IV and age, gender, ethnicity, marital status, employment status, age of first alcohol use, years of regular alcohol use, age of first drug use, years of regular drug use, life stress (as measured by the SRRS), social support (as measured by the MSPSS), family cohesion (as measured by the Cohesion subscale of the FES), family conflict (as measured by the Conflict subscale of the FES), therapeutic alliance (as measured by the WAI), and substance use consequences (as measured by the InDUC at baseline) as the DVs.

For African Americans, acculturative type was associated with a significant effect on the demographic variables ($F [42, 457.60] = 2.25, p < .001$). Univariate analyses indicated a significant effect for social support ($F [3, 167] = 7.31, p < .001$), family cohesion ($F [3, 167] = 3.25, p < .05$), and substance use consequences at baseline ($F [3, 167] = 5.20, p < .01$). No significant differences between the acculturative type groups were found on age ($F [3, 167] = 2.47, ns$), gender ($F [3, 167] = 0.59, ns$), marital status ($F [3, 167] = 1.47, ns$), employment status ($F [3, 167] = 1.45, ns$), age of first alcohol use ($F [3, 167] = 1.99, ns$), years of regular alcohol use ($F [3, 167] = 1.18, ns$), age of first drug use ($F [3, 167] = 0.40, ns$), years of regular drug use ($F [3, 167] = 0.47, ns$), life stress ($F [3, 167] = 1.62, ns$), family conflict ($F [3, 167] = 2.07, ns$), or therapeutic alliance ($F [3, 167] = 1.07, ns$).

Tukey post-hoc tests revealed that integrated African Americans ($M = 0.48, SD = 0.94$) were more likely to have higher levels of social support than marginalized African Americans ($M = -0.23, SD = 0.85, p < .001$). Marginalized African Americans ($M = -0.04, SD = 0.79$) were

more likely to have higher levels of family cohesion than integrated African Americans ($\underline{M} = -0.22$, $\underline{SD} = 0.88$, $p < .05$). Marginalized African Americans ($\underline{M} = 0.09$, $\underline{SD} = 0.69$) were more likely to experience higher levels of substance use consequences than assimilated African Americans ($\underline{M} = -0.72$, $\underline{SD} = 1.09$, $p < .01$). Separated African Americans ($\underline{M} = 0.36$, $\underline{SD} = 1.11$) were more likely to experience higher levels of substance use consequences than assimilated African Americans ($\underline{M} = -0.72$, $\underline{SD} = 1.09$, $p < .05$). Integrated African Americans ($\underline{M} = 0.06$, $\underline{SD} = 1.22$) were more likely to experience higher levels of substance use consequences than assimilated African Americans ($\underline{M} = -0.72$, $\underline{SD} = 1.09$, $p < .01$). No other specific post-hoc contrasts were significant. As a result, the variables on which the four acculturative types significantly differed (social support, family cohesion, and substance use consequences at baseline) were treated as covariates in subsequent analyses for African Americans.

African Americans' data were used to test the first hypothesis. It was hypothesized that participants who have integrated acculturative types would report having the least number of psychiatric symptoms; those who have assimilated or separated acculturative types would report having moderate amounts of psychiatric symptoms; and those with marginalized acculturative types would report having the highest number of psychiatric symptoms. A MANCOVA was performed with acculturative type (integrated, separated, assimilated, and marginalized) as the IV and the subscales of the BSI (Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism) as the DVs. Social support, family cohesion, and substance use consequences at baseline served as covariates.

For African Americans, acculturative type was associated with a significant effect on the BSI, ($F [27, 456.24] = 2.20$, $p < .01$; $\eta_p^2 = .112$). Univariate analyses indicated significant

differences between the acculturative type groups on Somatization ($F [3, 164] = 8.22, p < .001$), Obsession-Compulsion ($F [3, 164] = 6.71, p < .001$), Interpersonal Sensitivity ($F [3, 164] = 4.89, p < .01$), Depression ($F [3, 164] = 8.61, p < .001$), Anxiety ($F [3, 164] = 7.87, p < .001$), Hostility ($F [3, 164] = 9.05, p < .001$), Phobic Anxiety ($F [3, 164] = 10.38, p < .001$), Paranoid Ideation ($F [3, 164] = 7.21, p < .001$), or Psychoticism ($F [3, 164] = 9.10, p < .001$).

Tukey post-hoc tests revealed that marginalized African Americans ($M = 0.33, SD = 0.91$) had higher scores on Somatization than integrated African Americans ($M = -0.50, SD = 1.05, p < .001$) and assimilated African Americans ($M = -0.56, SD = 0.65, p < .001$). Marginalized African Americans ($M = 0.07, SD = 0.81$) had higher scores on Obsession-Compulsion than integrated African Americans ($M = -0.58, SD = 0.78, p < .001$) and assimilated African Americans ($M = -0.60, SD = 0.59, p < .01$). Marginalized African Americans ($M = 0.00, SD = 0.75$) had higher scores on Interpersonal Sensitivity than integrated African Americans ($M = -0.57, SD = 0.82, p < .001$) and assimilated African Americans ($M = -0.54, SD = 0.59, p < .05$). Marginalized African Americans ($M = 0.13, SD = 0.81$) had higher scores on Depression than integrated African Americans ($M = -0.61, SD = 0.76, p < .001$) and assimilated African Americans ($M = -0.68, SD = 0.58, p < .001$). Marginalized African Americans ($M = 0.08, SD = 0.83$) had higher scores on Anxiety than integrated African Americans ($M = -0.61, SD = 0.73, p < .001$) and assimilated African Americans ($M = -0.64, SD = 0.62, p < .001$). Marginalized African Americans ($M = 0.18, SD = 0.86$) had higher scores on Hostility than integrated African Americans ($M = -0.54, SD = 0.85, p < .001$) and assimilated African Americans ($M = -0.77, SD = 0.45, p < .001$). Marginalized African Americans ($M = 0.19, SD = 0.77$) had higher scores on Phobic Anxiety than integrated African Americans ($M = -0.55, SD = 0.74, p < .001$) and assimilated African Americans ($M = -0.65, SD = 0.55, p < .001$). Marginalized African

Americans ($\underline{M} = 0.17$, $\underline{SD} = 0.99$) had higher scores on Paranoid Ideation than integrated African Americans ($\underline{M} = -0.55$, $\underline{SD} = 0.89$, $p < .001$). Marginalized African Americans ($\underline{M} = 0.13$, $\underline{SD} = 0.87$) had higher scores on Psychoticism than integrated African Americans ($\underline{M} = -0.63$, $\underline{SD} = 0.72$, $p < .001$) and assimilated African Americans ($\underline{M} = -0.70$, $\underline{SD} = 0.61$, $p < .001$). No other specific post-hoc contrasts were significant.

Overall, the first hypothesis was partially supported. Integrated participants and assimilated participants did, indeed, have lower scores on measures of psychopathology than marginalized participants. Surprisingly, assimilated participants had lower scores on the Somatization, Obsession-Compulsion, Depression, Anxiety, Hostility, Phobic Anxiety, and Psychoticism subscales than integrated participants.

African Americans' data were used to test the second hypothesis. It was hypothesized that participants who have integrated acculturative types would report having the least ASA consequences at outcome; those who have assimilated or separated acculturative types would report having moderate ASA consequences; and those who have marginalized acculturative types would report having the most ASA consequences. An ANCOVA was performed with acculturative type (integrated, separated, assimilated, and marginalized) as the IV and the scores on the InDUC at outcome as the DV. Social support, family cohesion, and substance use consequences at baseline served as covariates.

Acculturative type was associated with a significant effect on the InDUC, ($F [3, 74] = 3.00$, $p < .05$; $\eta_p^2 = .108$). Tukey post-hoc tests revealed that integrated African Americans ($\underline{M} = 0.34$, $\underline{SD} = 1.25$) were more likely to experience substance use consequences at outcome than assimilated African Americans ($\underline{M} = -0.49$, $\underline{SD} = 0.63$, $p < .05$). No other specific post-hoc contrasts were significant.

Overall, the second hypothesis was not supported. This may have been partially due to a smaller sample size at outcome ($N = 81$) compared to the initial sample at baseline ($N = 171$).

African Americans' data were used to test the third hypothesis. It was hypothesized that participants who have integrated acculturative types would report having the least acculturative stress; those who have assimilated or separated acculturative types would report having moderate amounts of acculturative stress; and those who have marginalized acculturative types would report having the highest amount of acculturative stress. A MANCOVA was performed with acculturative type (integrated, separated, assimilated, and marginalized) as the IV and the subscales of the S.A.F.E (Social, Attitudinal, Familial, and Environmental) as the DVs. Social support, family cohesion, and substance use consequences at baseline served as covariates.

For African Americans, acculturative type was associated with a significant effect on the S.A.F.E. ($F [12, 426.26] = 4.02, p < .001; \eta_p^2 = .090$). Univariate analyses indicated significant differences between the acculturative type groups on the Social scale ($F [3, 164] = 13.10, p < .001$), Attitudinal scale ($F [3, 164] = 8.55, p < .001$), Familial scale ($F [3, 164] = 8.94, p < .001$), and Environmental scale ($F [3, 164] = 7.70, p < .001$).

Tukey post-hoc tests revealed that marginalized African Americans ($M = 0.37, SD = 0.88$) were more likely to have higher scores on the Social subscale than integrated African Americans ($M = -0.62, SD = 0.79, p < .001$) and assimilated African Americans ($M = -0.55, SD = 0.76, p < .001$). Marginalized African Americans ($M = 0.24, SD = 0.81$) were more likely to have higher scores on the Attitudinal subscale than integrated African Americans ($M = -0.55, SD = 0.86, p < .001$) and assimilated African Americans ($M = -0.32, SD = 0.89, p < .05$). Marginalized African Americans ($M = 0.35, SD = 0.81$) were more likely to have higher scores on the Familial subscale than integrated African Americans ($M = -0.50, SD = 0.97, p < .001$) and

assimilated African Americans ($M = -0.22$, $SD = 0.95$, $p < .05$). Marginalized African Americans ($M = 0.13$, $SD = 0.70$) were more likely to have higher scores on the Environmental subscale than integrated African Americans ($M = -0.51$, $SD = 0.76$, $p < .001$). No other specific post-hoc contrasts were significant.

Overall, the third hypothesis was supported. Integrated African Americans had the lowest scores, assimilated participants had second lowest scores, and marginalized African Americans had the highest scores on the S.A.F.E. subscales.

It was hypothesized that participants with higher levels of acculturative stress would experience more substance use consequences at baseline than participants with lower levels of acculturative stress. A multiple regression was performed with the subscales of the S.A.F.E. as the predictor variables and InDUC score at baseline as the criterion variable. Acculturative stress was not associated with a significant effect on the InDUC at baseline (Adjusted $R^2 = 0.03$, $F [4, 166] = 2.12$, ns).

It was hypothesized that participants with higher levels of acculturative stress would experience more substance use consequences at outcome than participants with lower levels of acculturative stress. A multiple regression was performed with the subscales of the S.A.F.E. as the predictor variables and InDUC score at two months as the criterion variable. Acculturative stress was not associated with a significant effect on the InDUC at two months (Adjusted $R^2 = 0.01$, $F [4, 76] = 1.29$, ns).

Overall, the fourth hypothesis was not supported.

In order to determine if dominant society immersion would correlate with acculturative stress, a multiple regression was performed with the subscales of the S.A.F.E (Social, Attitudinal, Familial, and Environmental) as the predictor variables and DSI as the criterion

variable. The acculturative stress subscales did significantly predict DSI (Adjusted $R^2 = 0.28$, $F [4, 166] = 17.42$, $p < .001$). Univariate analyses indicated that the Social subscale of the S.A.F.E. was a significant predictor of DSI ($t = -5.32$, $p < .001$). Bivariate correlation analysis indicated that the more participants were acculturated toward the dominant society, the less they experienced stress in a social setting ($r = -0.54$, $p < .001$). No significant differences were found on the Attitudinal scale ($t = 0.24$, ns), Familial scale ($t = -0.81$, ns), or Environmental scale ($t = 1.24$, ns).

In order to determine if ethnic society immersion would correlate with acculturative stress, a multiple regression was performed with the subscales of the S.A.F.E (Social, Attitudinal, Familial, and Environmental) as the predictor variables and ESI as the criterion variable. The acculturative stress subscales did significantly predict ESI (Adjusted $R^2 = 0.03$, $F [4, 166] = 2.48$, $p < .05$). However, univariate analyses indicated that ESI did not significantly correlate with any S.A.F.E. subscale by itself (all $ps > .05$).

Using African Americans' data in order to determine whether therapeutic alliance would positively correlate with treatment outcome, a partial Pearson product-moment correlational analysis was conducted between therapeutic alliance scores and InDUC scores at outcome, controlling for InDUC scores at baseline. Therapeutic alliance scores and InDUC scores were not significantly correlated with one another ($r = .03$, ns).

In order to determine whether program location (culturally-sensitive versus traditional outpatient) differed significantly on treatment variables (e.g., substance abuse treatment outcome, therapeutic alliance), a MANCOVA was performed with program location as the IV, InDUC at outcome and therapeutic alliance as the DVs, and InDUC at baseline as the covariate.

Program location site for African Americans was associated with a significant effect on treatment variables ($F [2, 135] = 3.80, p < .05; \eta_p^2 = .053$). Univariate analyses indicated no significant differences between location sites and treatment outcome as measured by the InDUC ($F [1, 136] = 0.40, ns$). Univariate analyses did indicate a significant difference between location sites and therapeutic alliance ($F [1, 136] = 6.49, p < .05; \eta_p^2 = .046$).

Hispanics

In order to determine whether the integrated, separated, assimilated, and marginalized Hispanic groups differed significantly from one another on demographic variables, a MANOVA was performed with acculturative type as the IV and age, gender, ethnicity, marital status, employment status, age of first alcohol use, years of regular alcohol use, age of first drug use, years of regular drug use, life stress (as measured by the SRRS), social support (as measured by the MSPSS), family cohesion (as measured by the Cohesion subscale of the FES), family conflict (as measured by the Conflict subscale of the FES), therapeutic alliance (as measured by the WAI), and substance use consequences (as measured by the InDUC at baseline) as the DVs.

For Hispanics, acculturative type was associated with a significant effect on the demographic variables ($F [42, 249.95] = 3.26, p < .001$). Univariate analyses indicated a significant effect for age ($F [3, 97] = 5.34, p < .01$), gender ($F [3, 97] = 7.31, p < .001$), marital status ($F [3, 97] = 4.85, p < .01$), employment status ($F [3, 97] = 4.78, p < .01$), age of first alcohol use ($F [3, 97] = 3.25, p < .05$), years of regular alcohol use ($F [3, 97] = 7.50, p < .001$), years of regular drug use ($F [3, 97] = 5.85, p < .01$), life stress ($F [3, 97] = 4.65, p < .01$), therapeutic alliance ($F [3, 97] = 9.35, p < .001$), social support ($F [3, 97] = 2.86, p < .05$), family

cohesion ($F [3, 97] = 4.95, p < .01$) and family conflict ($F [3, 97] = 10.79, p < .001$). No significant differences between the acculturative type groups were found on age of first drug use ($F [3, 97] = 2.47, ns$) and substance use consequences at baseline ($F [3, 97] = 0.95, ns$).

Tukey post-hoc tests revealed that assimilated Hispanics ($M = 32.38, SD = 8.38$) were more likely to be younger than marginalized Hispanics ($M = 39.73, SD = 8.01, p < .05$) or integrated Hispanics ($M = 42.11, SD = 7.52, p < .01$). Separated Hispanics ($M = 1.73, SD = 0.46$) were more likely to be female, whereas integrated Hispanics ($M = 1.15, SD = 0.36, p < .001$) were more likely to be male. Integrated Hispanics ($M = 3.40, SD = 0.97$) were more likely to be divorced, whereas marginalized Hispanics ($M = 2.58, SD = 1.58, p < .05$) and assimilated Hispanics ($M = 2.07, SD = 1.50, p < .01$) were more likely to be married. Assimilated Hispanics ($M = 1.85, SD = 1.07$) were more likely to be employed than integrated Hispanics ($M = 2.87, SD = 0.65, p < .01$). Marginalized Hispanics ($M = 17.46, SD = 11.66$) were more likely to have more years of regular alcohol use than integrated Hispanics ($M = 6.70, SD = 8.31, p < .001$) or assimilated Hispanics ($M = 7.15, SD = 6.95, p < .05$). Marginalized Hispanics ($M = 15.69, SD = 11.16$) were more likely to more years of regular drug use than integrated Hispanics ($M = 7.32, SD = 7.66, p < .01$) or separated Hispanics ($M = 6.20, SD = 9.43, p < .01$). Marginalized Hispanics ($M = 0.47, SD = 1.35$) were more likely to have more life stress than assimilated Hispanics ($M = -0.43, SD = 0.48, p < .05$). Integrated Hispanics ($M = 0.38, SD = 0.54$) were more likely to have more life stress than assimilated Hispanics ($M = -0.43, SD = 0.48, p < .05$). Integrated Hispanics ($M = 0.77, SD = 1.12$) were more likely to have higher levels of family cohesion than marginalized Hispanics ($M = 0.02, SD = 0.76, p < .05$) or assimilated Hispanics ($M = -0.23, SD = 1.15, p < .05$). Marginalized Hispanics ($M = 0.13, SD = 0.54$) were more likely to have higher levels of family conflict than integrated Hispanics ($M = -0.98, SD = 0.98, p$

< .001). Assimilated Hispanics ($M = 0.08$, $SD = 1.15$) were more likely to have higher levels of family conflict than integrated Hispanics ($M = -0.98$, $SD = 0.98$, $p < .01$). Integrated Hispanics ($M = 0.48$, $SD = 0.86$) were more likely to have higher levels of therapeutic alliance than marginalized Hispanics ($M = -0.36$, $SD = 0.75$, $p < .01$) or assimilated Hispanics ($M = -0.38$, $SD = 1.19$, $p < .05$). Separated Hispanics ($M = 0.76$, $SD = 0.71$) were more likely to have higher levels of therapeutic alliance than marginalized Hispanics ($M = -0.36$, $SD = 0.75$, $p < .01$) or assimilated Hispanics ($M = -0.38$, $SD = 1.19$, $p < .01$). No other specific post-hoc contrasts were significant. As a result, the variables on which the four acculturative types significantly differed (age, gender, marital status, employment status, age of first alcohol use, years of regular alcohol use, years of regular drug use, life stress, therapeutic alliance, social support, family cohesion, and family conflict) were treated as covariates in subsequent analyses for Hispanics.

Hispanics' data were used to test the first hypothesis. It was hypothesized that participants who have integrated acculturative types would report having the least number of psychiatric symptoms; those who have assimilated or separated acculturative types who in turn would report having moderate amounts of psychiatric symptoms; and those who have marginalized acculturative types would report having the highest number of psychiatric symptoms. A MANCOVA was performed with acculturative type (integrated, separated, assimilated, and marginalized) as the IV and the subscales of the BSI (Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism) as the DVs. Age, gender, marital status, employment status, age of first alcohol use, years of regular alcohol use, years of regular drug use, life stress, therapeutic alliance, social support, family cohesion, and family conflict served as covariates.

For Hispanics, acculturative type was associated with a significant effect on the BSI, ($F [27, 225.52] = 1.60, p < .05; \eta_p^2 = .157$). However, univariate analyses indicated no significant differences between the acculturative type groups on Somatization ($F [3, 85] = 1.07, ns$), Obsession-Compulsion ($F [3, 85] = 1.13, ns$), Interpersonal Sensitivity ($F [3, 85] = 1.58, ns$), Depression ($F [3, 85] = 1.06, ns$), Anxiety ($F [3, 85] = 1.48, ns$), Hostility ($F [3, 85] = 0.99, ns$), Phobic Anxiety ($F [3, 85] = 0.38, ns$), Paranoid Ideation ($F [3, 85] = 1.62, ns$), or Psychoticism ($F [3, 85] = 0.85, ns$).

Overall, the first hypothesis was partially supported.

Hispanics' data were used to test the second hypothesis. It was hypothesized that participants who have integrated acculturative types would report having the least ASA consequences; those who have assimilated or separated acculturative types would report having moderate ASA consequences; and those who have marginalized acculturative types would report having the most ASA consequences. An ANCOVA was performed with acculturative type (integrated, separated, assimilated, and marginalized) as the IV and the scores on the InDUC as the DV. Age, gender, marital status, employment status, age of first alcohol use, years of regular alcohol use, years of regular drug use, life stress, therapeutic alliance, social support, family cohesion, and family conflict served as covariates. Acculturative type was not associated with a significant effect on the InDUC, ($F [3, 39] = 0.05, ns; \eta_p^2 = .004$).

Overall, the second hypothesis was not supported. This may have been partially due to a smaller sample size at outcome ($N = 55$) compared to the initial sample at baseline ($N = 101$).

Hispanics' data were used to test the third hypothesis. It was hypothesized that participants who have integrated acculturative types would report having the least acculturative stress; those who have assimilated or separated acculturative types would report having moderate

amounts of acculturative stress; and those who have marginalized acculturative types would report having the highest amount of acculturative stress. A MANCOVA was performed with acculturative type (integrated, separated, assimilated, and marginalized) as the IV and the subscales of the S.A.F.E (Social, Attitudinal, Familial, and Environmental) as the DVs. Age, gender, marital status, employment status, age of first alcohol use, years of regular alcohol use, years of regular drug use, life stress, therapeutic alliance, social support, family cohesion, and family conflict served as covariates.

For Hispanics, acculturative type was not associated with a significant effect on the overall S.A.F.E. ($F [12, 217.24] = 1.35, \underline{ns}; \eta_p^2 = .061$). Univariate analyses indicated no significant differences between the acculturative type groups on the Social scale ($F [3, 85] = 0.25, \underline{ns}$), Attitudinal scale ($F [3, 85] = 1.65, \underline{ns}$), Familial scale ($F [3, 85] = 0.18, \underline{ns}$), or Environmental scale ($F [3, 85] = 1.08, \underline{ns}$).

Overall, the third hypothesis was not supported.

Hispanics' data were used to test the fourth hypothesis. It was hypothesized that participants with higher levels of acculturative stress would experience more substance use consequences at baseline than Hispanics with lower levels of acculturative stress, a multiple regression was performed with the subscales of the S.A.F.E. as the predictor variables and InDUC score at baseline as the criterion variable. Acculturative stress was associated with a significant effect on the InDUC at baseline (Adjusted $R^2 = 0.37, F [4, 96] = 15.77, p < .001$). Although univariate analyses indicated no significant effects on any of the subscales individually, (all $ps > .05$), bivariate correlation analyses indicated significant positive correlations between the InDUC scores at baseline and the Social scale ($r = 0.58, p < .001$), the

Attitudinal scale ($r = 0.62, p < .001$), the Familial scale ($r = 0.51, p < .001$), and the Environmental scale ($r = 0.62, p < .001$).

It was hypothesized that participants with higher levels of acculturative stress would experience more substance use consequences at outcome than participants with lower levels of acculturative stress. A multiple regression was performed with the subscales of the S.A.F.E. as the predictor variables and InDUC score at two months as the criterion variable. Acculturative stress was associated with a significant effect on the InDUC at two months (Adjusted $R^2 = 0.14, F [4, 50] = 3.26, p < .05$). Univariate analyses indicated a significant effect for the Social subscale ($t = -2.61, p < .05$) and the Environmental subscale ($t = 2.46, p < .05$). Specifically, Environment S.A.F.E. subscale was significantly positively correlated with InDUC ($r = 0.28, p < .05$). The Social subscale did not significantly correlate with InDUC ($r = 0.08, ns$).

Overall, the fourth hypothesis was partially supported.

In order to determine if dominant society immersion would correlate with acculturative stress, a multiple regression was performed with the subscales of the S.A.F.E (Social, Attitudinal, Familial, and Environmental) as the predictor variables and DSI as the criterion variable. The acculturative stress subscales did not significantly predict DSI (Adjusted $R^2 = 0.01, F [4, 96] = 0.72, ns$). Univariate analyses indicated that participants' level of immersion in the dominant society did not significantly correlate with any S.A.F.E. subscales individually (all $ps > .05$).

In order to determine if ethnic society immersion would correlate with acculturative stress, a multiple regression was performed with the subscales of the S.A.F.E (Social, Attitudinal, Familial, and Environmental) as the predictor variables and ESI as the criterion variable. The acculturative stress subscales did significantly predict ESI (Adjusted $R^2 = 0.10, F$

[4, 96] = 3.71, $p < .01$). However, univariate analyses indicated that participants' level of immersion in the ethnic society did not significantly correlate with any S.A.F.E. subscales individually (all $ps > .05$).

Using Hispanics' data in order to determine whether therapeutic alliance would positively correlate with treatment outcome, a partial Pearson product-moment correlational analysis was conducted between therapeutic alliance scores and InDUC scores controlling for substance use consequences at baseline. Therapeutic alliance scores and InDUC scores were not significantly correlated with one another ($r = -.21$, ns).

In order to determine whether the language choice (Spanish versus English) of questionnaires differed significantly on demographic variables, a MANOVA was performed with language choice as the IV and age, gender, ethnicity, marital status, employment status, age of first alcohol use, years of regular alcohol use, age of first drug use, and years of regular drug use as the DVs.

For Hispanics, language choice for questionnaires was not associated with a significant effect on the demographic variables ($F [8, 92] = 0.58$, ns). No significant differences between the groups were found on age ($F [1, 99] = 0.06$, ns), gender ($F [1, 99] = 0.08$, ns), marital status ($F [1, 99] = 0.05$, ns), employment status ($F [1, 99] = 0.28$, ns), age of first alcohol use ($F [1, 99] = 0.15$, ns), years of regular alcohol use ($F [1, 99] = 0.31$, ns), age of first drug use ($F [1, 99] = 0.25$, ns), and years of regular drug use ($F [1, 99] = 1.30$, ns).

In order to determine whether the language choice of questionnaires differed significantly on psychiatric symptoms, a MANOVA was performed with language choice as the IV and the subscales of the BSI as the DVs.

For Hispanics, language choice was not associated with a significant effect on the BSI, ($F [9, 91] = 0.55$, ns; $\eta_p^2 = .080$). However, univariate analyses indicated a significant difference between the groups on Obsession-Compulsion ($F [1, 99] = 4.67$, $p < .05$). No significant differences were found on Somatization ($F [1, 99] = 1.12$, ns), Interpersonal Sensitivity ($F [1, 99] = 3.69$, ns), Depression ($F [1, 99] = 3.34$, ns), Anxiety ($F [1, 99] = 2.42$, ns), Hostility ($F [1, 99] = 3.38$, ns), Phobic Anxiety ($F [1, 99] = 2.87$, ns), Paranoid Ideation ($F [1, 99] = 1.81$, ns), or Psychoticism ($F [1, 99] = 3.54$, ns).

In order to determine whether the language choice of questionnaires differed significantly on substance abuse treatment outcome, a MANOVA was performed with language choice as the IV and the InDUC at outcome as the DV. Language choice was not associated with a significant effect on the InDUC, ($F [1, 99] = 0.01$, ns; $\eta_p^2 = .000$).

In order to determine whether the language choice of questionnaires differed significantly on acculturative stress, a MANOVA was performed with language choice as the IV and the subscales of the S.A.F.E. as the DVs. For Hispanics, language choice was not associated with a significant effect on the overall S.A.F.E. ($F [4, 96] = 0.69$, ns; $\eta_p^2 = .028$). Univariate analyses indicated no significant differences between the groups on the Social scale ($F [1, 99] = 0.33$, ns), Attitudinal scale ($F [1, 99] = 0.96$, ns), Familial scale ($F [1, 99] = 0.52$, ns), or Environmental scale ($F [1, 99] = 0.95$, ns).

CHAPTER FIVE: CONCLUSION

The primary purpose of the current study was to predict alcohol and substance abuse treatment outcome from cultural variables, namely, acculturative type and acculturative stress. Four formal hypotheses were made based on results from previous research: 1) acculturative type would correlate with psychiatric symptoms; 2) acculturative type would correlate with ASA treatment outcome, as measured by ASA consequences after an 8-week period of treatment; 3) acculturative type would correlate with acculturative stress, and 4) acculturative stress would correlate with ASA consequences when entering the treatment facility (i.e. baseline) and at treatment outcome (i.e. completion of 8 weeks of treatment). Each hypothesis was examined based on data from the entire sample (both African Americans and Hispanics), and separately for each ethnic group.

Phinney et al. (2001) suggested that examining a bi-dimensional model, rather than a uni-dimensional definition of ethnic identity, may lead to more consistent findings in ethnic identity and acculturation research. Based on Berry's (1970, 1974, 1984, 1999) theory that acculturation is best delineated from two orthogonal variables, his Bidimensional Acculturation Model was employed to create four acculturation types: 1) Assimilated- individuals who do not maintain their own ethnic cultural identity, but seek daily interaction with those immersed into the mainstream, U.S. culture, 2) Separated- individuals who place a high value on holding onto their original ethnic culture and avoid interaction with other cultures, 3) Integrated/bicultural- individuals who value both maintaining their own ethnic cultural identity and daily interaction

with the mainstream culture, and 4) Marginalized- individuals who have little interest in their own ethnic cultural identity or interacting with the mainstream culture.

A median split procedure, based on previous research (Farver & Lee-Shin, 2000; Ward & Rana Deuba, 1999; Zheng, Sang, & Wang, 2003; Farver, Bhadha, & Narang, 2002), was utilized to separate participants into the acculturative type groups, allowing an examination of the groups relative to one another within this sample. While the precedent has been set to examine participants' acculturative type relative to one another within this sample, care must be taken not to erroneously draw conclusions about the general population at large based on a sample of minority participants who use alcohol (base rate in general population = 42.8% of Hispanics and 39.9% of African Americans) and drugs (base rate in general population = 7.2% of Hispanics and 9.7% of African Americans). For example, "highly acculturated" Hispanic substance abusers in this sample may be very different from highly acculturated Hispanics among the general population who may, in fact, have different levels of acculturation in absolute terms (Negy & Woods, 1992).

The first hypothesis was based on research that has found positive correlations between acculturation level and mental health (Berry, 1999; Berry & Sam, 1997; Kohbod, 1997; Neff & Hoppe, 1993; Padilla, Wagatsuma, & Lindholm, 1985; Shibazaki, 1999; Sundquist, Bayard-Burfield, Johansson, & Johansson, 2000). Specifically based on Berry's (1999) and Berry and Sam's (1997) research suggesting that integrated individuals would be the most psycho-emotionally adjusted and marginalized individuals would be the least psycho-emotionally adjusted, it was hypothesized that Hispanic and African American participants who have integrated acculturative types would report having the least number of psychiatric symptoms; those who have assimilated or separated acculturative types would report having moderate

amounts of psychiatric symptoms; and those who have marginalized acculturative types would report having the highest number of psychiatric symptoms, relative to the other acculturative types.

In the combined sample (African Americans and Hispanics), examination of the first hypothesis revealed partial support with effect size estimates revealing a small effect, accounting for 8.2% of the variance between groups. Assimilated individuals generally had significantly lower scores, and thus fewer psychiatric symptoms as predicted, than marginalized individuals. This pattern was statistically significant on Somatization, Depression, Anxiety, Hostility, Phobic Anxiety, and Psychoticism. Also as predicted, integrated individuals had significantly lower scores on Somatization than marginalized individuals. Contrary to expectations, however, integrated individuals had significantly higher scores on Anxiety, Hostility, Phobic Anxiety, and Psychoticism than assimilated individuals. Also, contrary to expectations that they would have similar scores, assimilated individuals had significantly lower scores on Depression, Anxiety, Hostility, Phobic Anxiety, and Psychoticism than separated individuals.

When African American and Hispanic data were analyzed separately, the results contrary to the hypothesis disappeared. Based on analyses for each ethnic group separately, the results offered partial support for first hypothesis with effect size estimates revealing a small effect, accounting for 11.2% of the variance for the African American group, and a medium effect, accounting for 15.7% of the variance for the Hispanic group. Integrated and assimilated African Americans generally had significantly lower scores on the psycho-emotional subscales, as predicted, than marginalized African Americans. For integrated African Americans, compared to marginalized African Americans, this pattern was true on Somatization, Obsession-Compulsion, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid

Ideation, and Psychoticism. For assimilated African Americans, compared to marginalized African Americans, this pattern was true on Somatization, Obsession-Compulsion, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, and Psychoticism. Although the overall analysis indicated that acculturative type was associated with the BSI, none of the Hispanic acculturative type groups and the individual BSI subscales were statistically significantly different.

Overall, the findings based on the analyses of the first hypothesis suggest that having a separated or marginalized acculturative type may contribute to poor mental health and psychiatric problems for individuals with ASA problems, consistent with previous research (Berry, 1999; Berry & Sam, 1997). This was apparent particularly when the data from African Americans and Hispanics were examined together, and when African Americans were examined separately. This finding is consistent with those of Phinney and Devich-Navarro (1997) in which separated individuals reported more experiences of discrimination and feelings of being excluded, and the findings of Sadowsky et al. (1991) and Levine and Padilla (1980) in which marginalized individuals were more likely to engage in heavy drinking. Experiences of discrimination, feelings of exclusion, and heavy alcohol use likely contribute to higher levels of psychiatric symptoms. It is worth noting here that these data were correlational, thus making it difficult to discern the direction of causality. For example, having psychiatric symptoms may contribute to discrimination and/or alcohol usage.

One surprising finding in the combined analysis, though, was that assimilated individuals appeared to have less psychiatric symptoms than integrated individuals. Although this effect disappeared when the ethnic groups' data were analyzed separately, alternative explanations for the combined effect merit attention. Phinney and Devich-Narvarro (1997) hypothesize that

individuals may be “alternating biculturals” in that they feel comfortable with both their own ethnic culture and the mainstream culture, while only expressing one part of their bicultural nature at a time. Alternating biculturals will vacillate between cultures, depending on the situation (i.e. appearing more mainstream at work, appearing more ethnic at home, appearing more mainstream at a predominately White school or more ethnic at a predominantly ethnic school, etc.) Perhaps, the participants in this study who identified themselves as “assimilated” are, in fact, alternating biculturals who chose their own ethnic culture identity as predominant in the role of “research participant” for a study examining cultural factors. If this were the case, perhaps, the bicultural nature of these individuals may not be entirely reflected in their answers to the survey questions. Or, perhaps, the median split procedure used to separate the groups into acculturative type categories was not sensitive enough to capture the bicultural nature of these individuals.

Another possible explanation for the observed elevated psycho-emotional adjustment of assimilated participants may be that individuals with ASA who are well-immersed into the dominant society (i.e. assimilated) have easier access to ASA resources that can facilitate increased mental health in addition to recovery (e.g. Alcoholics Anonymous, Narcotics Anonymous, ASA treatment programs, and church support groups). Such programs generally have been established and supported through the dominant society, ensuring more opportunities for recovery and increased mental health among individuals who live and function within the mainstream society. Stewart (1999), for example, found that Hispanics who had higher levels of acculturation were more likely to attend 12-step meetings (i.e. AA and NA). On the other hand, it appears that individuals with ASA problems and who have little contact with the dominant society (i.e. marginalized and separated) are at the greatest risk for mental health difficulties.

The second formal hypothesis examined the role of acculturative type in ASA treatment outcome. Although most previous research-- which has utilized uni-dimensional constructs of ethnic identity and acculturation-- has found inconsistent findings between ethnic identity and ASA (Wallace, 2002; Brook, Whiteman, Balka, Win, & Gursen, 1998; Marsiglia, Kulis, & Hecht, 2001; Thomas, 1996; James, Kim, & Armijo, 2000; Bates, Beauvais, & Trimble, 1997; Yan, 1999) and between acculturation and ASA (Carvajal, Photiades, Evans, & Nash, 1997; Coutts, 2000; Epstein, Botvin, & Diaz, 2001; Figueroa-Moseley, 1998; Fraser, Piacentini, Van Rossem, Hien, & Rotheram-Borus, 1998; Garcia, 1999; Greene, 1997; Stewart, 1999; Alaniz, Treno, & Saltz, 1999; Caetano & Clark, 2003; Farabee, Wallisch, & Maxwell, 1995; Gossage, 1998; Ortega, Rosenheck, Alegria, & Desai, 2000; Polednak, 1997; Yi & Daniel, 2001), the previous studies in which community samples have been used have found positive correlations; whereas the previous studies in which clinical samples have been used have found negative correlations. This difference may be, in part, due to the broad range of ASA scores in community samples and the more restricted range of ASA scores among clinical populations. In the current study employing a clinical population, it was hypothesized that acculturative type would correlate with ASA treatment outcome in the same manner as psychiatric problems, utilizing the bi-dimensional approach to create acculturative types based on Berry's model (1999). Specifically, it was hypothesized that participants who have integrated acculturative types would report experiencing the least ASA consequences at the end of eight weeks of treatment; those who have assimilated or separated acculturative types would report experiencing moderate numbers of ASA consequences at the end of treatment; and those who have marginalized acculturative types would report experiencing the most ASA consequences at the conclusion of treatment.

Examination of the second hypothesis revealed no support for the hypothesis with effect size estimates revealing small effects for the combined, African American, and Hispanic groups, accounting for 5.3%, 10.8%, and 0.4% of the variance, respectively. The only significant finding, contrary to predicted expectations, was that integrated/bicultural African Americans had significantly *more* consequences related to substance use at the end of treatment than assimilated African Americans. Phinney and Devich-Navarro (1997) found that bicultural African Americans reported more pressure from peers and more uncertainty about their culture. Moreover, previous research showing that peer pressure to use drugs and alcohol has been implicated in increased ASA (e.g., Dishion, Capaldi, Spracklen, & Fuzhong, 1995; Farrell & Danish, 1993; Kandel, Kessler, & Margulies, 1978; Newcomb & Bentler, 1989; Patterson, Forgatch, Yoerger, & Stoolmiller, 1998; Swaim, Oetting, Edwards, & Beauvais, 1989) provides support for the notion that increased peer pressure and uncertainty may lead to increased problems related to drug and alcohol use for integrated individuals. For example, James et al. (2000) and Figueroa-Moseley (1998) have found that a strong ethnic identity correlates with high levels of drug use. Thus, integrated or bicultural individuals, who are relatively more immersed into their ethnic cultural norms, may have more ASA than assimilated individuals, who generally are less immersed into their ethnic cultural norms.

The lack of significant findings for both the combined group and the Hispanic group may be due, in part, to that fact that Hispanic and African American youth have been found to be more likely to be referred to ASA treatment through the criminal justice system, be mandated for treatment, and be released unsatisfactorily from treatment than White adolescents (Schillington, & Clapp, 2003). Although no formal assessment was made of voluntary versus involuntary entrance into treatment, the current sample was selected from among the community substance

abuse provider's programs that had the most non-court mandated individuals. However, it cannot be assured with certainty that all the participants had sought treatment voluntarily and the lack of voluntary participation in treatment in some may have influenced the current research outcomes.

Another possible explanation for the non-significant association between acculturative type and treatment outcome may be the smaller sample sizes at outcome (i.e. only 81 African Americans and only 55 Hispanics completed a second survey packet after two months) compared to the initial sample (171 African Americans and 101 Hispanics). With the reduced sample sizes, analyses that are based on dividing the sample into four acculturative type groups become more challenging. In particular, acculturative categories were created based on within sample comparisons, and this may have adversely affected the lack of significant findings. Future analyses with adequate power are warranted. Finally, the lack of significant findings may be due to acculturative type having no bearing on ASA treatment outcome, with other factors, such as history of use, genetic predisposition towards use, and availability of alcohol and drugs, contributing more toward treatment outcome than type or level of acculturation.

The third hypothesis was based on research that has found correlations between acculturation type and acculturative stress (Berry, 2005; Berry, Kim, & Boski, 1998; Sodowsky, Lai, & Plake, 1991). Based on Berry et al.'s research which suggests that integrated/bicultural individuals experience the least acculturative stress related to real or perceived pressures to conform to mainstream customs and values, and that marginalized individuals experience the most acculturative stress, it was hypothesized that participants with integrated/bicultural acculturative types would report the least acculturative stress; those with assimilated or separated

acculturative types would report moderate amounts of acculturative stress; and those with marginalized acculturative types would report the most acculturative stress.

Examination of the third hypothesis revealed partial support, with effect size estimates revealing small effects for the combined, African American, and Hispanic groups, accounting for 4.3%, 9.0%, and 6.1% of the variance, respectively. In the combined data, marginalized individuals generally had significantly higher acculturative stress scores, as predicted, than assimilated and integrated individuals. Marginalized individuals experienced higher levels of stress in situations involving difficulty in interpersonal interactions due to language or cultural barriers, intolerant cultural beliefs and attitudes, and access to or an inability to connect with family members compared to assimilated individuals. Marginalized individuals experienced higher levels of stress in situations involving difficulty in interpersonal interactions due to language or cultural barriers compared to integrated individuals. This finding was generally true for African Americans as well. Marginalized African Americans experienced higher levels of stress in situations involving difficulty in interpersonal interactions due to language or cultural barriers, intolerant cultural beliefs and attitudes, and access to or an inability to connect with family members compared to assimilated African Americans. Marginalized African Americans experienced higher levels of stress in situations involving difficulty in interpersonal interactions due to language or cultural barriers, intolerant cultural beliefs and attitudes, access to or an inability to connect with family members, and stereotypes and prejudices compared to integrated African Americans. Contrary to expectations, however, there were no significant differences among Hispanic acculturative type groups with respect to stress related to pressure to acculturate.

Some research may help to explain why acculturation type generally correlated with acculturative stress for African Americans but not for Hispanics. Thompson, Anderson, and

Bakeman (2000) found that African Americans who received messages about race and discrimination as a child held more rigid attitudes about race and experienced more pressure from society to acculturate as an adult. It may be that these childhood messages, along with other negative events, have helped shape African Americans' acculturative types, with more negative messages pushing them toward marginalization patterns to escape the negative input, which, in turn, may lead to increase levels of acculturative stress. Messages to Hispanic children about how they likely will encounter racism and discrimination in society may not be as prominent in Hispanic households as they may be in African American households. Thus, marginalized Hispanics, at least in this sample, may not experience the same type of acculturative stress as the African Americans.

The fourth hypothesis was based on research that has found positive correlations between acculturative stress and ASA (Cabrera-Strait, 2001; Diaz, 1995; Gil, Wagner, & Vega, 2000; Smith, 2000), suggesting that marginalized individuals may experience high levels of ASA consequences specifically as a result of the pressures to acculturate to mainstream society. Additional research has found that anti-mainstream attitudes (Redden, 2003) and less affiliation with their own ethnic group (Wilcots, 2001) correlate positively with acculturative stress and symptoms of depression and inversely with self-esteem among African Americans.

The fourth hypothesis predicted that acculturative stress would correlate with ASA when entering the treatment facility (i.e. baseline) and at treatment outcome. This hypothesis was partially supported. In the combined group, participants experiencing higher levels of acculturative stress related to encountering being stereotyped and prejudice in their environment demonstrated higher levels of substance use consequences at baseline. In the Hispanic group, overall acculturative stress was associated with substance use consequences at baseline, but none

of the individual subscales of the acculturative stress measure correlated with ASA at baseline. Hispanic participants experiencing higher levels of pressure to acculturate related to difficulty in interpersonal interactions due to language or cultural barriers and encountering prejudice had higher levels of substance use consequences at the outcome of treatment. Based on previous research, increased alcohol use among Hispanics has been found to correlate with higher levels of maladaptive and delinquent behavior (Cabrera-Strait, 2001). Such behavior may contribute to increased interpersonal difficulties and may include involvement in the criminal justice system, engaging in risky sexual behavior (Huba, et. al., 2000), antisocial behavior (Boyle, et al., 1992; Cadoret, Yates, Troughton, Woodworth, & Stewart, 1995; Clark, Parker, & Lynch, 1999; Clark, Vanyukov, & Cornelius, 2002), and sensation-seeking behavior (Crawford, Pentz, Chou, Li, & Dwyer, 2003). It should be noted that these data are correlational in nature and can only suggest associations among acculturative stress and ASA, rather than causal influences.

Acculturative stress was not associated with substance use consequences in the African American group at baseline, or in the combined group or African American group at outcome. Perhaps, African Americans do not experience relief of acculturative stress through ASA, or ASA does not impact the experience of acculturation. One possible explanation for the lack of significant findings among the African Americans is a restricted range of acculturative stress scores, given that they were born and raised in the U.S. However, examination of the range of acculturative stress scores for African Americans (range = 21-86, mean = 48.22, standard deviation = 18.10) and for Hispanics (range = 21-87, mean = 57.05, standard deviation = 22.26) did not provide evidence for a restricted range of scores.

Finally, additional analyses were conducted to further elucidate the relationship between acculturative stress and acculturation to both the dominant society (DSI) and the ethnic minority

culture (ESI). In the combined sample, the more participants were acculturated toward the dominant society, the less they experienced pressure to acculturate from interpersonal interactions and societal influences. Naturally, individuals who are comfortable with the language, food, music, current affairs, media, and social functions of the mainstream culture have an easier time navigating the interpersonal interactions and societal pressure to conform to conventional norms than those who are not comfortable with mainstream culture. This correlation was also observed among the present sample of African Americans. The more acculturated African Americans were to the dominant society, the less pressure they perceived (i.e. stress) to conform. However, no relationship between acculturative stress and DSI was found in the Hispanic group. Perhaps, the Hispanics in this relatively unique group (i.e. substance abusers) do not perceive much pressure to conform to the dominant culture's customs and norms regardless of the level of acculturation. Possibly, individuals associate with similar people with respect to their acculturation level (i.e. marginalized individuals associate with other marginalized individuals) and thus feel no pressure to conform or adapt to U.S. manners.

An association between ESI and acculturative stress was found in both the African American and Hispanic groups, indicating that the more acculturated individuals were to their own ethnic culture the less acculturative stress they experienced. However, none of the individual acculturative stress subscales significantly correlated with acculturation toward the ethnic minority culture, indicating that the overall trend for a correlation existed only when the subscales were combined. Perhaps, individuals who are comfortable with the language, food, music, current affairs, media, and social functions of their own ethnic culture do not experience as much pressure to conform to the norms of the mainstream society compared to those who are not comfortable with their own ethnic culture. Although there is limited research examining

acculturative stress as it relates to acculturative categories, few, if any, research studies exist to date that have examined the relationship between acculturative stress and immersion in the dominant and ethnic societies separately. Additional studies elucidating these relationships are warranted.

In summary, assimilated and integrated alcohol and substance abusers appeared to have better mental health (as evidenced by fewer endorsed psychiatric symptoms), while marginalized abusers appeared to have poor psychiatric adjustment. In addition, those who are relatively assimilated appeared to have fewer problems related to ASA when compared to integrated participants. Assimilated and integrated participants appeared to experience less pressure to acculturate, whereas marginalized participants generally experienced the most pressure to acculturate. Moreover, participants with higher levels of pressure to acculturate related to interpersonal interactions and experiences related to societal prejudice manifested more consequences related to ASA. Last, immersion in the dominant society correlated with lower levels of pressure to acculturate related to interpersonal interactions and prejudice.

The current data portray an optimistic picture for individuals who have complete or partial affiliation with the dominant society. These findings suggest that individuals who immerse themselves within the dominant culture are at reduced risk for psychiatric and mental health problems, ASA problems, and problems related to pressure to acculturate. Conversely, individuals who find themselves isolated from the dominant society (and their own ethnic culture) appear to be a greatest risk for problems in these areas.

As the United States becomes increasingly diverse, community substance abuse treatment programs increasingly can expect to treat individuals who vary in terms of acculturation and acculturative stress. It seems critical that agencies consider ways to improve the treatment

experiences of their clients who manifest different amounts of psychopathology and substance abuse related to cultural factors. For example, treatment programs would benefit from identifying cultural barriers to effective remediation of substance abuse and/or psychiatric problems. During such treatment, clients could be informed about the protective (or detrimental) variables that impact their psycho-social functioning. Clients also could be informed of available culturally sensitive support groups, such as those that may be provided by churches or other agencies within the community. Substance abuse treatment program staff also could provide outreach services to minority individuals tailored specifically to their perceived needs. It is hoped that the findings from this study aid researchers working with minority populations by alerting them to the array of stressors and challenges confronting individuals at different acculturation and stress levels. Future research that can delineate the cultural mechanisms at work in sustaining substance abuse and mental health problems among minority individuals will provide a much-needed analytical framework to facilitate improved substance abuse treatment programs.

Limitations of This Study

Some potential limitations of the current study exist. Although participants were informed of the survey nature and reading requirements of this study during the informed consent procedure, no formal assessment of reading ability was made. As such, reading competency cannot be guaranteed and some participants may not have adequately understand the questions they were answering. A formal assessment of reading competency would be recommended in future studies.

Similarly, a formal assessment of educational level of participants was not undertaken. Due to this oversight on the part of the principal investigator, valuable information concerning the relationship between study variables and educational attainment could not be made. A formal assessment of educational attainment would be recommended for future studies.

Ethnicity was defined in very broad, and all-encompassing terms, in the current study. No attempt was made to delineate different ethnic subgroups (e.g., Mexican, Puerto Rican, Caribbean Islander) among broad ethnic groups (e.g., Hispanic). As a result, no conclusions can be made about the unique factors associated with ethnic subgroups based on the results of this study. Future research examining these subgroups and their association with study variables is warranted.

Although there is relatively little research on African Americans and cultural factors related to ASA treatment outcome, the current study's results were somewhat surprising and contrary to hypotheses. While the current results, in and of themselves, are interesting, future research is needed to replicate these findings before strong conclusions can be made.

The manner in which acculturative type categories were created (e.g., median split method) provides comparison among groups within the current sample, but does not provide an adequate basis to compare these groups relative to the general population. This limitation severely restricts the generalizability of the current results to African Americans and Hispanics as a whole.

Finally, some of the measures utilized in the current study were not normed primarily with African American and Hispanic substance abusers. The lack of comparable norming groups limits the cultural validity of the measures. Future research should examine the cross-validity of these questionnaires with diverse participant populations.

Addressing each of the limitations would enhance the strength of future studies.

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