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Psychiatric Symptoms, Parental Attachment, and Reasons for Use as Correlates of Heavy Substance Use Among Treatment-Seeking Hispanic Adolescents

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Abstract

In early adolescence, Hispanics self-report higher drug use rates compared to White and African American peers. Among adolescent users, heavy users have more negative behavioral and health consequences. The purpose of this cross-sectional study is to examine whether psychiatric symptoms, parental attachment, and reasons for use predict heavy alcohol and illicit drug use (more than 10 times in the past three months) among Hispanic adolescents.

Methods—This study examines baseline data from a study evaluating a family based substance abuse treatment program for Hispanic adolescents. Participants were 14–17 years old ($N = 156$, 44% female). Adolescent reports on the Diagnostic Interview Schedule for Children Predictive Scales measured psychiatric symptoms of major depressive disorder, attention deficit hyperactivity disorder, conduct disorder, and anxiety. The Personal Experiences Inventory measured type and amount of drug use, as well as perceived social and psychological benefits of drug use. The Inventory of Parent and Peer Attachment measured trust, communication, and alienation between adolescents and their mothers. Logistic regression identified correlates of heavy alcohol use and heavy illicit drug use among Hispanic adolescents.

Results—Higher social benefits were associated with increased likelihood of heavy alcohol use. Conduct disorder, higher levels of maternal attachment, lower levels of acculturation, and higher levels of psychological benefits of use were associated with an increased likelihood of heavy illicit drug use.

Conclusion—These findings support the assumption that substance use treatment among Hispanic adolescents must be capable of addressing co-occurring psychiatric disorders, familial relationships, and the individual reasons/motivators to use.

Keywords

Hispanics; adolescents; psychiatric symptoms; heavy drug use; heavy alcohol use

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Declaration of interest

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Any alcohol and illicit drug use can have negative effects on adolescents (Cook, Pollock, Rao, & Clark, 2002; Mensch & Kandel, 1988) but those adolescents who engage in heavier drug and alcohol use are at an increased risk for a variety of adverse health, behavioral, and social consequences (Getz & Bray, 2005), while adolescents who dabble with drugs are less likely to experience severe adverse outcomes (Chassin, Flora, & King, 2004). Data for 12th graders show that heavy marijuana use (20 or more times in the past month), which had declined to 1.9% in 1992, has been hovering at approximately 6.5% since 2011 (Johnston, O'Malley, Miech, Bachman, & Schulenberg, 2014). The National Survey on Drug Use and Health reported similar, though slightly higher, rates of heavy marijuana use among adolescents, indicating 7.1% of adolescents reported heavy marijuana use in the past month (SAMHSA, 2014). High rates of heavy alcohol use have also been reported among adolescents in recent years (Patrick & Schulenberg, 2010). Data show that compared to conventional users, adolescents who self-identified as heavy drug and alcohol users experienced more problems with physical and mental health (including suicidal ideation), academic concerns, legal involvement, financial hardship, delinquency, violence, physical injury, interpersonal problems, and risky sexual behavior (Austin, Skager, Bailey, & Bates, 2007). Other research indicates that, compared to light and nondrinkers, heavy alcohol users are more likely to report academic problems, engage in suicidal behaviors, engage in aggressive and delinquent behaviors, and drive under the influence (Greenblatt, 2000). Research also shows that children who begin using substances in adolescence are much more likely to become addicted than those who begin using after their teenage years (Griffin, Bang, & Botvin, 2010). Our ability to prevent and treat heavy drug and alcohol use among adolescents would be enhanced by better understanding the factors that may contribute to more severe use.

Importance of this research with Hispanic adolescents

Prior research has highlighted racial/ethnic disparities in Hispanic adolescent substance use (Prado, Szapocznik, Maldonado-Molina, Schwartz, & Pantin, 2008; Szapocznik, Prado, Burlew, Williams, & Santisteban, 2007). National statistics indicate that in early adolescence, Hispanics report the highest substance use rates on nearly all classes of drugs compared to Whites and African Americans (Johnston, et al., 2014). In addition, Hispanic adolescents have greater odds of engaging in heavy episodic alcohol use, compared to White and African American adolescents (Patrick & Schulenberg, 2010). Moreover, recent research has shown that heavy episodic drinking has decreased since the 1980's in the US across gender and race/ethnicities with the exception of Hispanics (Keyes & Miech, 2013). Getz and Bray (2005) found that Hispanic ethnicity predicted heavy alcohol use among adolescents, even after controlling for perceived peer alcohol use, previous marijuana use, and age (e.g. older aged adolescents). Knowledge about these correlates might help to identify reasons why substance use has been stable in Hispanic adolescents, while decreasing in White and African American cohorts.

Understanding the unique profiles of heavy drug and alcohol use among Hispanic adolescents is particularly important given that Hispanic adolescents constitute approximately 23% of the total adolescent population in the US (U.S. Census, 2010) and are expected to constitute one third of US adolescents by 2040.

Predictors of heavy drug and alcohol use

Previous research on predictors of adolescent drug and alcohol use has identified a number of factors associated with heavy use. Among these factors are acculturation, psychiatric symptoms, weak parental attachment, and other perceived social benefits/reasons for using.

Acculturation

Acculturation is defined as a complex, multidimensional process unfolding over time that involves contact between two autonomous cultural groups and results in change in one or both groups (Berry, 2003), and has been identified as an important cultural variable to consider in Hispanic adolescent substance use (Schwartz, Unger, Zamboanga, & Szapocznik, 2010). The acculturation process includes both adopting aspects of the new culture while also retaining aspects of one's own traditional culture (Sullivan et al., 2007). The Normative Change model (e.g., Caetano, 1987) suggests that Hispanic youth who adopt American culture (i.e., are more acculturated) have more unhealthy beliefs about substance use, which may increase substance use. Previous research indicates that adopting US cultural norms (e.g. increased acculturation) is associated with increased substance use among Hispanic adolescents (Marsiglia, Nagoshi, Parsai, Booth, & Castro, 2014; Saint-Jean & Crandall, 2008), while other studies have found the retention of Hispanic cultural values to be protective against Hispanic adolescent substance use (Grigsby, Forster, Soto, Baezconde-Garbanati, & Unger, 2014; Salas-Wright, Clark, Vaughn, & Córdova, 2015; Unger, Schwartz, Huh, Soto, Baezconde-Garbanati, 2014). In contrast, the Acculturation Stress model (Vega & Gil, 1998) posits that Hispanic youth experience multiple stressors, including discrimination and family conflicts, due to balancing American cultural expectations with Hispanic cultural expectations. Other studies have found evidence to support this model, (e.g., Martinez, 2006; Zamboanga, Schwartz, Jarvis, & Van Tyne, 2009). Furthermore, research has also demonstrated the link between lower levels of acculturation and more severe drug use (Rodriguez, et al., 2007). Thus, more research is needed to understand the process of acculturation among Hispanic adolescents, particularly as it relates to heavy drug and alcohol use.

Psychiatric symptoms

Prior research indicates that psychiatric symptoms (e.g., ADHD, conduct disorder, and depression) are major factors in the transition from lighter drug and alcohol use to heavier use (White, Xie, Thompson, Loeber, & Stouthamer-Loeber, 2001). Conduct disorder, in particular, is often linked to drug use (Cerdeira, Tracy, Sanchez, & Galea, 2011). In addition to research showing that ADHD is associated with heavier use of drugs and alcohol (Molina & Pelham, 2003; Sibley et al., 2014), other psychiatric symptoms, including anxiety and depression, have also been found to predict higher levels of alcohol use (Blumenthal, Leen-Feldner, Frala, Badour, & Ham, 2010; Nation, & Heflinger, 2006; Thompson, Goldsmith, & Tran, 2011). Costello, Erkanli, Federman, & Angold, (1999) found that both depressive symptoms and disruptive behavior disorders (e.g. conduct disorder) were associated with a higher rate and earlier onset of substance use.

Parental attachment

The literature tends to agree that strong parent-adolescent attachment protects against adolescent drug and alcohol use. Prior research has found that having a strong relationship with a parent was associated with a decreased likelihood of substance use problems (Nurco & Lerner, 1996). More recent research has shown that the link is stronger in girls than in boys (Danielsson, Romelsjö, & Tengström, 2011). Other research has found that high paternal attachment among adolescents was associated with decreased likelihood of cocaine use and that adolescents who experienced maternal rejection were more likely to engage in marijuana use (Kirkcaldy, Siefen, Surall, & Bischoff, 2003).

When examining the relationship between parental attachment and substance use, Hilariski (2005) reported that Hispanic and African American youth, who self-reported alcohol and/or illicit substance use were more likely to self-report attachment problems than those who did not report using alcohol or drugs. While parental attachment has been shown to be protective against drug and alcohol use among middle school Hispanic adolescents (Marsiglia, Miles, Dustman, & Sills, 2002), gender may moderate this relationship, particularly among Mexican-American adolescents (Cota-Robles & Gamble, 2006).

Reasons for use

In addition to the factors outlined above, adolescents also report specific reasons for, or potential perceived benefits to, heavy use. It is particularly important to identify the motivations reported by adolescents. Prior research has shown that coping and social motives, as well as positive expectancies, were associated with heavy substance use (Patrick, Schulenberg, O'Malley, Johnston, & Bachman, 2011; Stice, Kirz, & Borbely, 2002). In particular, social/recreational reasons such as having a good time with friends, coping with negative affective reactions, getting away from problems, and coping with anger/frustration have not only been associated with heavy episodic drinking but have been predictive of heavy drinking as adults, almost 17 years later (Patrick et al., 2011).

Current study

Although research on predictors and correlates of adolescent drug and alcohol use has provided a greater conceptual understanding of initiation and experimentation (Petraitis, Flay, & Miller, 1995; Soto et al., 2011), less is known about predictors and correlates of heavy drug and alcohol use among adolescents and even less about the relationship of these variables in Hispanic adolescents. The guiding theoretical framework for this study was the Social Ecological model of Human Development (Bronfenbrenner, 1979). The premise of this model is that multiple systems (e.g., microsystems, mesosystems, exosystems, and macrosystems) all influence individual functioning. This study focuses on the following: individual child level factors including psychiatric symptoms and reasons for drug use, family level factors such as the quality of attachment between parents and youth, and cultural factors measured by acculturation and their impact on heavy alcohol and illicit drug use.

The research objectives for this cross-sectional study were to identify the specific psychiatric symptoms, attachment difficulties, and self-reported reasons for using that were associated

with heavy alcohol and drug use among Hispanic adolescents. To examine these relationships, the authors used baseline data from an intervention that addressed issues such as family conflict, psychiatric conditions, and drug use. We used baseline data collected prior to intervention to examine the relationships between psychiatric symptoms, attachment, and self-reported reasons for use and heavy alcohol and drug use. The authors hypothesize that adolescents with higher levels of acculturation will be more likely to report heavy alcohol and illicit substance use. In addition, adolescents with externalizing disorders are expected to report heavy illicit substance use, while those with internalizing disorders will likely report alcohol use. The role of parental attachment will also be examined and may lead to findings that support the protective role that attachment plays. However, because of the study population, the distribution of attachment may not mirror that of typical adolescents. Finally, adolescent with strong social or psychological motivations for consuming alcohol and/or illicit substances may be heavy users.

Method

Participants

Participants in this study were 156 first- and second-generation Hispanic adolescents (102 male and 54 female) and their parents. It should be noted that the study consisted of almost twice as many males as females. This is likely due to the fact that adolescents participating in the study had been admitted to the Juvenile Addictions Receiving Facility (JARF) of a local Southeastern hospital for assessment and referral to treatment in the community due to substance use problems. The majority of adolescents reported marijuana use (81%) and/or alcohol use (67%) in the past three months, with a smaller proportion reporting cocaine use (46%). Table 1 displays demographic and cultural characteristics for the sample based on self-report. The mean age of the adolescents was 16 years ($SD = 1.33$). The most commonly reported nationalities of the adolescents were US (62%), Cuba (8%), Nicaraguan (6%), and Honduras (6%); the mothers were mostly Cuban (38%), Nicaraguan (12%), and Honduran (12%). Most (70%) of the families reported an annual household income of less than \$25,000 (10% less \$10,000 and 20% above \$40,000). Four families did not report income.

To be included in the study, the adolescents and their families had to meet the following criteria: (a) adolescent 14 to 17 years old, (b) adolescent living with at least one family member of an older generation (e.g., parent or grandparent) who self-reported as Hispanic, and (c) adolescent fully meeting *Diagnostic and Statistical Manual IV* (DSM-IV) criteria for a Substance Use Disorder.

Procedures

This study is a secondary analysis of data generated by a treatment development study to develop and test an innovative treatment for Hispanic youth. All participant adolescents were recruited from the JARF. A social worker on the unit determined if a new admission to the JARF was eligible for the research program and obtained permission from the primary caregiver to be contacted by a study research assistant. In order to participate, both parents and the adolescent had to complete consent and assent forms. Adolescents and parents were administered the assessment battery either while they were at the JARF awaiting discharge

or at the intake appointment once they were referred to the study for treatment. Participants were informed that their information would be kept confidential to the extent permitted by law. The assessment battery consisted of both self-report measures and semi-structured interviews. All measures were available in Spanish and English and assessors were fluent in both languages. Assessors offered to read items to parents and adolescents in the event that they had difficulty reading. The University of Miami Institutional Review Board approved all study procedures.

Measures

Personal Experiences Inventory—The Personal Experiences Inventory (Winters & Henly, 1989) was used to assess drug use and benefits of use. This measure has multiple subscales and has been reliable with Hispanic youth (Winters, Latimer, Stinchfield, & Egan, 2004).

Heavy alcohol use was based on a single item that assessed alcohol use in the past 3 months. If respondents indicated that they consumed alcohol 10 or more times in the past 3 months, they were coded as heavy alcohol users. The comparison group consisted of those that consumed alcohol fewer than 10 times in the past 3 months, including those that did not drink. Heavy illicit drug use was based on items that assessed marijuana and/or cocaine use in the past 3 months. Most of the adolescents in the sample who reported cocaine also used marijuana. Moreover, the lower rates of cocaine use in this sample did not allow us to analyze cocaine use independently of marijuana use. If adolescents reported having used marijuana and/or cocaine 10 or more times in the past 3 months, they were coded as heavy illicit drug users. Adolescents who reported consuming marijuana and/or cocaine never or fewer than 10 times in the past 3 months made up the comparison group. This cut-off was determined based on combining categories from the PEI. We made the determination of the cut-off based on the distribution of the data in our sample. However, this cut-off has also been used by other researchers in the past (Sterk, Theall, & Elifson, 2007).

Social Benefits of Use is an 8-item scale that reflects use associated with increased social confidence and social acceptance (Henly & Winters, 1988). This scale had a Cronbach's alpha of .90 in the original sample and .77 in this study. Psychological Benefits of Use is made up of 7 items that suggest the use of chemicals to reduce negative emotional states and to enhance pleasure. In the original sample this scale had a Cronbach's alpha of .94; in our sample it was found to be .87.

DISC Predictive Scales—The Diagnostic Interview Schedule (DISC) Predictive Scales (DPS; Lucas et al., 2001) is an efficient brief screening instrument that is widely used for the evaluation of children and adolescents. DPS diagnoses are highly correlated to diagnoses on the full DISC (Lucas et al., 2001). This study examined the following psychiatric disorders: Attention Deficit Hyperactivity Disorder, Major Depression, any anxiety disorder, and Conduct Disorder.

Inventory of Parent and Peer Attachment—The Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987) has 25 items scored using a five-point Likert scale ranging from *almost never or never true* to *almost always or always true*. The

IPPA yields three subscales for each parental figure; only responses related to mothers were used in this analysis. Subscales include Maternal Trust ($\alpha = .89$), Maternal Communication ($\alpha = .85$), Maternal Alienation ($\alpha = .77$). These subscales can be combined to yield a total Maternal Attachment score, which was used in this study.

Bicultural Involvement Questionnaire—The Bicultural Involvement Questionnaire (BIC; Szapocznik, Kurtines, & Fernandez, 1980) assesses the degree to which a person feels comfortable in each culture (American culture or Hispanic culture) independent of the other. It measures biculturalism and cultural involvement and yields scores on both American and Hispanic domains. These scores also yield a classification into four domains: bicultural (high on both American and Hispanic), assimilated (high on American and low on Hispanic), separated (low on American and high on Hispanic), and marginalized (low on both American and Hispanic). For the purpose of this study, we examined scores on the American domain in order to assess level of acculturation. It should be noted that 90% of the adolescents in this sample were highly acculturated. Approximately half were bicultural, and 40% were assimilated.

Data analysis

This study used two separate hierarchical logistic regression models to identify correlates of heavy alcohol use and heavy illicit drug use. In the first step, demographic variables (including age and gender) were included along with variables examining psychiatric symptoms (depression, ADHD, conduct disorder, and anxiety) and attachment to mother, factors that have been shown to be related to alcohol and illicit drug use. In the second step, social and psychological benefits of drug use were added to the model in order to determine whether inclusion of these factors significantly improves the prediction model. An examination of statistical power revealed that power was sufficient (above .80) to detect a moderate effect.

Results

The results of the logistic regression analysis are displayed in Table 2 below. It should be noted that multicollinearity was examined and not deemed problematic.

Heavy alcohol use

Demographics, psychiatric symptoms, maternal attachment, acculturation, and benefits of use combined to predict heavy alcohol use [$-2LL = 139.02$, $\chi^2(2) = 8.17$, $p = .017$]. Anxiety ($\beta = -1.09$, $p = .050$) was marginally significant and social benefits of use ($\beta = .760$, $p = .028$) was the only significant correlate of heavy alcohol use. Adolescents who reported higher social benefits of drug use were more than twice as likely (OR = 2.26) to report heavy alcohol use. While not statistically significant ($\alpha > .05$), adolescents who had anxiety disorder had almost three times the odds (OR = 2.94) of not being a heavy alcohol user than those without anxiety disorder.

Heavy drug use

Demographics, psychiatric symptoms, maternal attachment, acculturation, and benefits of use combined to predict heavy illicit drug use [$-2LL = 170.44$, $\chi^2(2) = 8.51$, $p = .014$]. Conduct disorder ($\beta = .826$, $p = .040$), maternal attachment ($\beta = .733$, $p = .001$), acculturation ($\beta = -0.03$, $p = .031$), and psychological benefits of use ($\beta = .531$, $p = .032$) were found to be significant correlates of heavy illicit drug use. Adolescents with symptoms of conduct disorder were twice as likely ($OR = 2.28$) to engage in heavy illicit drug use, higher levels of maternal attachment were associated with being two times more likely ($OR = 2.08$) to engage in heavy illicit drug use, higher levels of acculturation were associated with decreased odds ($OR = 0.97$) of heavy illicit drug use, and higher psychological benefits of use were associated with one and a half ($OR = 1.70$) times greater odds of reporting heavy illicit drug use.

Discussion

Heavy alcohol and drug use has been linked to more severe detrimental health, behavioral, and social consequences (Getz & Bray, 2005). Light use, or experimenting with substances, may be common among adolescents and may have a weaker link to adverse consequences (Chassin, Flora, & King, 2004). For this reason, identifying risk factors associated with heavy alcohol and drug use has implications for prevention and intervention efforts. This study was designed to further our understanding of the reasons behind heavy alcohol and drug use among Hispanic adolescents who were in treatment for substance use. More specifically, we examined the role of psychiatric symptoms, parental attachment, acculturation, and self-reported reasons for use as correlates of heavy alcohol and illicit drug use.

Because we found different patterns of correlates for heavy alcohol and drug use, we discuss the findings separately for these two substances.

Summary of the findings

Heavy alcohol use—The importance of understanding the predictors of heavy alcohol use have become particularly important to our research because of our recent findings showing that parents grossly underestimate their children's drinking. This is evident in the discrepancy between adolescents and parent reports. The discrepancy is not as large in reports of drug use.

The findings of this study suggest that social benefits of use was significantly correlated with heavy alcohol use while anxiety was found to be a marginally significant predictor of heavy alcohol use. Perceived social benefits of drug use, reported as an increase in social confidence and social acceptance as a result of substance use, was a significant correlate of heavy alcohol use. This is consistent with findings from Monitoring the Future, an ongoing study of adolescents and young adults (Patrick et al, 2011), that social/recreational reasons are significantly associated with heavy episodic drinking at age 18. This has important implications for understanding the reasons Hispanic adolescents engage in drinking heavily and suggests that interventions such as Motivational Interviewing can focus both on the

costs and benefits of heavy use in social situations. Alternative strategies for gaining acceptance and feeling confident in social situations can also be explored.

Endorsing symptoms of anxiety was inversely related to heavy alcohol use. This is inconsistent with previous research that has shown the relationship between social anxiety and alcohol and drug use (Thompson, Goldsmith, & Tran, 2011). One possibility for this discrepancy is that previous research focused on social anxiety, while this study examined anxiety symptoms more generally. Also, most research in this area has been conducted among college-age and adult populations in which social situations may involve larger groups of people. Another important factor to consider is that the population in this study was a substance-using sample, meaning that those participants with anxiety may have been self-medicating with marijuana and therefore may not have had the need to drink alcohol as regularly. Finally, the model used in this study controlled for social benefits of use, which may be higher among those with social anxiety, therefore potentially contributing to the negative relationship between anxiety and heavy alcohol use. Nonetheless, the relationship between anxiety and heavy alcohol use among adolescents should be studied further.

Heavy drug use—The relationship between acculturation and substance abuse has been examined extensively among Hispanics. Most studies have found that as acculturation increases so does substance abuse (Saint-Jean & Crandall, 2008). In this study, however, higher levels of acculturation were associated with lower odds of heavy drug use. These findings are consistent with the findings of Rodriguez, et al. (2007), whose results indicated that youth with lower levels of acculturation had more severe drug problems at intake into treatment, and the findings of Martinez (2006) that indicated that youth Americanism was negatively associated with youth likelihood of substance use. Following the Acculturation Stress Model, it is possible the youth with lower acculturation were using drugs in an attempt to cope with stress linked to the acculturation process, including family conflicts or discrimination. It should be noted that many previous studies examining the relationship between acculturation and substance use may not have distinguished between lifetime use that would include experimentation or light use, and heavy use, which was the focus of this study. In addition, over half of our sample (62%) was born in the United States, and on average the sample had lived in the US for approximately 13 years. Therefore, the trends observed in this study may be quite different from those observed among a population of mostly first-generation or more recent immigrants.

A second risk factor associated with heavy marijuana and/or cocaine use was psychiatric symptoms, particularly conduct disorder. This finding is consistent with research that has shown a link between conduct disorder and drug use (Cerdeira, Tracy, Sanchez, & Galea, 2011; Winters, Latimer, Stinchfield, & Henley, 1999). The findings in this study imply that conduct disorder is associated with heavy illicit drug use and not just experimental use. This may be a consequence of early initiation into drug use that later escalates into heavy use among youth with conduct disorder. This explanation was tested with our data, and while we did find a trend to support this conclusion, it was not statistically significant. While other psychiatric symptoms (i.e., ADHD, anxiety, and depression) have been shown to be associated with drug use (Sibley et al., 2014; Blumenthal et al., 2010; Nation, & Heflinger, 2006), they did not predict heavy illicit drug use in this sample.

Perhaps the most unexpected finding from our study was that maternal attachment was associated with heavy illicit drug use. These findings appear to be somewhat at odds with research by Fosco, Stormshak, Dishion, and Winter (2012), who found that only father-youth connectedness predicted problem behaviors such as substance use while mother-youth connectedness did not. The literature argues against the perception that problematic parent-adolescent relationship quality is the norm (McWey, Claridge, Stevenson Wojciak, & Lettenberger-Klein, 2015). It is possible that the direction of this effect may be unique to the population of this study: adolescents with substance use problems that ultimately found themselves in a receiving facility for assessment and treatment. However, one possible explanation for this finding is that adolescents who experience high levels of trust and communication with their mothers are able to be more truthful about their drug use because they do not fear adverse consequences as a result of their use. Another possibility is that the adolescents reporting the highest levels of attachment are, in fact, “enmeshed” and therefore experiencing an unhealthy level of attachment. To begin to understand the relationship between attachment and heavy illicit drug use, further research would have to be conducted among this population.

Perceived psychiatric benefits of use was a significant correlate of heavy illicit drug use. This finding is important because psychiatric symptoms of ADHD, depression, anxiety, and conduct disorder were already factored into the model. Therefore, items measuring the use of chemicals to reduce negative emotional states were found to be significant even after controlling for underlying psychiatric symptoms. Recent research by Blevins and colleagues (2016) on motives for marijuana use among heavy-using high school students revealed that using to cope with negative affect was more frequently endorsed by high school students compared to college students. Moreover, the tendency to use to cope was associated with more marijuana-related problems, lower self-efficacy for avoiding use, and higher rates of psychiatric symptoms.

Limitations and considerations

This is a cross-sectional study, which makes it impossible to determine the nature of the direction between these factors. For example, it is uncertain as to whether adolescents engage in drug use to alleviate psychiatric symptoms related to an underlying psychiatric condition (e.g., depression, anxiety, or ADHD) or if psychiatric symptoms are exacerbated as a result of engaging in substance use. Moreover, both could be a manifestation of a single underlying biological predisposition. In order to determine the direction of these relationships, these variables would have to be examined longitudinally. Regardless of direction, it is evident that by the time these adolescents initiate treatment, all of these conditions are present in many individuals. Therefore, it is important that treatment for this population be sufficiently comprehensive to handle all of the multiple conditions regardless of what came first. Another limitation of this study is that we did not measure parental factors that have also been shown to contribute to drug use among Latino youth. In addition, the distribution of gender in this sample was not balanced. Overall, 65% of the sample was male. Although this is typical for studies of substance abuse treatment samples, the results should be interpreted in light of that fact. Lastly, we would like to acknowledge that we did not examine the effect of age of arrival nor did we include it in the demographics. We made

this determination because of the limited age range of the adolescents in the sample and the fact that we were already examining length of time in the United States.

The findings in this study support the need for treatment for substance use among Latino/Hispanic adolescents to have a strong component focusing on co-occurring psychiatric disorders and a motivational interviewing component to determine get at the individual reasons/motivators to use. The results also suggest that counselors working with Latino/Hispanic youth must avoid preconceptions about the relationship between acculturation and family member attachment to drug use, and seek to understand the role that these variables can play in each individual case.

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Table 1

Demographic and cultural characteristics of the sample.

Adolescent demographic characteristics	Immigrants (<i>N</i> = 56)		US-born (<i>N</i> = 96)	
	M	SD	M	SD
Age	16.38	1.28	15.98	1.34
Years in U.S.	8.77	4.49	15.29	1.88

	<i>N</i>	%	<i>N</i>	%
Females	18	32	34	35
Culture-Related Factors				
Prefer English	36	64	95	98
Bicultural	24	43	53	55
Assimilated	22	39	39	40
Marginalized	3	5	4	4
Separated	6	11	1	1

Table 2

Results of logistic regression.

Correlates	Heavy alcohol use		Heavy illicit drug use	
	OR	<i>p</i>	OR	<i>p</i>
Age	1.09	.637	1.02	.907
Gender	0.92	.882	1.13	.793
Depression	1.41	.561	1.29	.65
ADHD	2.42	.090	1.52	.355
Conduct disorder	1.68	.297	2.28	.04
Anxiety	0.34	.050	0.78	.587
Attachment	1.17	.512	2.08	.001
Acculturation	0.99	.389	0.97	.031
Social benefits of use	2.14	.028	1.41	.298
Psychological benefits of use	1.33	.305	1.7	.032

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