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Ethnic Group Differences in Substance Use, Depression, Peer Relationships and Parenting among Adolescents Receiving Brief Alcohol Counseling

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Abstract

This study examined differences in substance use and related risk factors in a matched sample of Hispanic and White non-Hispanic adolescents receiving brief alcohol counseling. Findings revealed that the White non-Hispanic adolescents reported smoking a higher number of cigarettes per day. The Hispanic adolescents reported perceiving less acceptance from the neighborhood environment in which they live, while their parents reported monitoring their teens less than the parents' of the White non-Hispanics. Consistent with findings found in community samples, the overall findings of this study suggest that Hispanic and White non-Hispanic adolescents enrolled in this alcohol intervention with similar baseline characteristics.

Keywords

Adolescents; ethnicity; substance use; brief alcohol counseling

Epidemiological findings show that substance use prevalence rates among Hispanic youth tend to be quite similar to, but in some cases higher than those reported by White non-Hispanic youth. These higher rates of use are particularly seen among younger Hispanics. According to the Monitoring the Future study (Johnston, O'Malley, Bachman & Schulenberg, 2008), Hispanic 8th graders report more alcohol and illicit drug use, with the exception of amphetamines, than their White non-Hispanic counterparts. Yet, by the time White non-Hispanics enter the 12th grade, their use of both alcohol and drugs surpasses the use rates of Hispanic 12th graders. Statistics indicate that as many as 40% of Hispanic adolescents drop out of high school (Greene & Forster, 2003), leading Johnston and colleagues (2008) to conclude that the decline of overall drug use among 12th grade

Hispanics may be due to the fact that many Hispanic students drop out of high school and are therefore not included in the 12th grade statistics.

Literature has consistently shown that numerous factors across several domains are related to adolescent substance use. Individual risk factors include early aggression (Miller-Johnson, Lochman, Coie, Terry & Hurlburt, 1998), conduct problems (Costello, Erkanli, Federman & Angold, 1999; Hussong, Curran & Chassin, 1998), anxiety (Kaplow, Curran, Angold & Costello, 2001; Thomas, Randall & Carrigan, 2003), and hyperactivity-impulsivity (Kaplow, Curran & Dodge, 2002; Molina, Smith & Pelham, 1999). Affiliation with antisocial peers has also been strongly linked to early alcohol use initiation (Simons-Morton, 2004) frequency of alcohol use (Henry, Slater, & Oetting, 2005), and drug use (Allen, Donohue, Griffin, Ryan, & Turner, 2003). Within the family, parental substance use, family conflict, and poor family management practices are important risk factors (Windle, 1999), while parental monitoring (Stattin & Kerr, 2000; Leventhal & Brooks-Gunn, 2000) and parental warmth and support (Barnes, Reifman, Farrell & Dintcheff, 2000; Barnow, Schuckit, Smith, Preuss & Danko, 2002) are protective factors against adolescent substance use.

Previous studies conducted on large community samples have demonstrated similar risk and protective factors associated with substance use among White non-Hispanic and Hispanic adolescent samples (Brook, Brook, Gordon, Whiteman, & Cohen, 1990; Flannery, Vazsonyi, Torquati, & Fridrich, 1994; Vega, Zimmerman, Warheit, Apospori, & Gil, 1993). For instance, Vega and colleagues (1993) compared the prevalence of substance use risk factors among non-Hispanic, Cuban, other Hispanic, and African American adolescent males, yet they found no differences between these ethnic/racial groups in the cumulative prevalence of risk factors, such as family substance use, psychosocial adjustment, peer substance use and approval of substance use, and deviant behaviors. Further, in a study comparing substance use risk factors within sixth and seventh grade White non-Hispanic and Hispanic youth (Flannery et al., 1994), significant differences were only found in the prevalence rates of two of eleven risk factors, with Hispanic adolescents reporting lower school grades and lower levels of school adjustment. No significant differences were found in drug use, aggression, depression, impulsivity, self-efficacy, peer pressure, peer substance use, parental monitoring, or parent-child involvement. In a longitudinal study of early substance use risk factors among 7th and 10th grade adolescents, Ellickson and Morton (1999) found Hispanic and White non-Hispanic adolescents to share similar risk profiles; however the influence of both early marijuana use and weak attachment to parents as risk factors were considerably stronger for Hispanic adolescents.

While not much variability has been seen in the prevalence of common substance use risk factors among community samples of adolescents of Hispanic and White non-Hispanic backgrounds, other studies have demonstrated that these risk factors can have differing effects depending on one's ethnic/racial background. For instance, studies have found parental involvement in adolescents' lives to have a greater inhibiting effect against substance use among Hispanic adolescents than African American and White non-Hispanic adolescents (Broman, Reckase & Freedman, 2006; Smith & Krohn, 1995). Further, the pattern by which adolescents are exposed to these risk factors may also vary according to ethnic/racial background. Several studies have demonstrated that deviant peer affiliation tends to increase among Hispanic adolescents as a result of culture-related strains in parent-child relationships (Brook, 1998; Chappin & Brook, 2001; Epstein, 2003). Similarly, depression and other mental health outcomes have also been linked to culture change (De la Rosa, 2002; Wight et al., 2005).

Comparative epidemiologic studies on adolescent substance use and related factors are rare, and those among adolescents receiving alcohol counseling are even rarer. Whether Hispanic and White non-Hispanic adolescents enter brief alcohol interventions with similar or different characteristics is not well understood. This limited knowledge is the result of a lack of Hispanic representation in treatment research studies (Chambless et al., 1996; Miranda, 1996; Szapocznik, Lopez, Prado, Schwartz & Pantin, 2006), and ethnic disparities in treatment seeking behaviors (Kataoka, Zhang, & Wells, 2002; McCabe et al., 1999). Understanding the baseline characteristics with which adolescents of differing ethnic/racial backgrounds enter alcohol interventions will help inform the design of culturally-tailored interventions, as well as aid in our understanding of how these baseline characteristics influence adolescents' response to alcohol interventions and retention. This study examined differences in substance use, depression, peer relationships, and parental monitoring and practices among a matched sample of Hispanic and White non-Hispanic adolescents presenting for a brief alcohol intervention.

Methods

Participants

The sample included 76 adolescents between the ages of 13 to 17 years ($M_{\text{age}} = 15.34$, $SD = 1.14$; 50% male), the majority of whom (89.5%; $n = 68$) were recruited from a pediatric or adult Emergency Department (ED) of a level I regional trauma center in the Northeast. A smaller subset of the sample (10.5%; $n = 8$) was recruited via advertisements in the community. All participants were classified as alcohol positive, that is they reported consuming alcohol within six hours of their ED admission; had a positive blood alcohol test or breathalyzer reading; and/or scored 4 or above on the Alcohol Use Disorders Identification Test (AUDIT; see "Measures"). Adolescents who self-identified as being Hispanic or Latino were classified as Hispanic in this study. The sample included 38 Hispanic adolescents who were matched with 38 White non-Hispanic adolescents of the same age and gender with the closest assessment date. Participants who were suicidal, were in police custody, had serious injuries requiring hospitalization or had incomplete screening data were excluded from this study.

Procedure

Participants were recruited as part of a larger randomized clinical trial evaluating the efficacy of a brief individual intervention compared to a brief family-based intervention. Adolescents recruited from the ED were referred to the study by the ED or biochemistry lab staff, who were instructed to send an electronic page to research staff when an adolescent was identified in the ED either as having consumed any alcohol within six hours of their admission (in the case of ED staff) or as having tested positive (i.e., $BAC > 0.0$) for alcohol via medical staff-drawn blood test (in the case of the biochemistry lab). Adolescents recruited from the community responded to local bus and newspaper advertisements and scored 4 or above on the AUDIT.

All participants were required to pass a brief mental status exam before completing the baseline assessments. The mental status exam consisted of questions assessing temporal orientation, spatial orientation, memory, attention, and immediate and delayed recall. The data reported here were collected as part of the baseline adolescent and parent assessments. Baseline assessments, for both adolescents and their parents, were completed prior to the randomization of the alcohol positive participants to the interventions being tested in the larger clinical trial. Parental consent and adolescent assent were obtained for all participants in this study. The study was approved by both the University and hospital Human Subjects Committee.

To minimize alternate explanations for study findings, each Hispanic adolescent was matched with a White non-Hispanic adolescent of the same age and gender and with the closest assessment date. The final matched sample consisted of 76 participants (38 pairs). We were unable to match participants on income because income data was only collected on a small subset of the Hispanic sample. Further, paired samples *t* tests revealed a significant difference between Hispanics ($M = 4.44$, $SD = 2.19$) and White non-Hispanics ($M = 6.41$, $SD = 1.81$) on income; $t(33) = -4.13$, $p = .000$. To examine whether income was associated with substance use-related dependant variables, one-tailed Pearson correlations were performed. One significant correlation emerged from these analyses indicating that income was significantly correlated with amount of drinks consumed per drinking occasion ($r = -.216$, $p < .05$). All other results from these analyses were non-significant.

The assessment measures were read aloud to adolescents and self-administered by parents. The assessment battery took an average of 45 minutes to complete. Participants were compensated for their time with a store gift certificate. Adolescents and their parents or guardians were told that the teens' reports of substance use would not be provided to parents or medical providers.

Measures

Substance use and related behaviors—The Alcohol Use Disorders Identification Test (AUDIT) is an assessment tool developed by the World Health Organization as a way to identify preliminary signs of hazardous drinking (Babor, de la Fuente, Saunders & Grant, 1989). Adolescents were scored on ten items assessing alcohol dependence symptoms or alcohol-related problems. A score of four or above was used to classify adolescents as alcohol positive in this study (Fairlie, Sindelar, Eaton & Spirito, 2006). The *Adolescent Drinking Inventory* (ADI; Harrell & Wirtz, 1989) is a 24-item self-report measure which focuses on social, psychological, and physical symptoms of alcohol problems. Items are scored on a three-point scale from 0 (not like me at all) to 2 (like me a lot), or on a 4-point frequency scale from 0 (never) to 3 (4 times or more). In this study, the ADI yielded a Cronbach's alpha of .90. Three items from the *Adolescent Drinking Questionnaire* (ADQ; Jessor, Donovan & Costa, 1989) were used to measure past three months drinking frequency (days per month), quantity (drinks per occasion), and frequency of high-volume drinking (5 or more drinks per occasion). Each item was scored on an eight-point scale. One open-ended question from the ADQ was also used to measure maximum number of drinks consumed in one occasion. Two questions from the *Drug Use Questionnaire* (DUQ; Spirito, 1999) were used to assess the number of marijuana use days and the number of cigarettes used per day in the last 30 days. Finally, one item from the *Young Adult Drinking and Driving Questionnaire* (Donavan, 1993) questionnaire was used to assess the frequency of riding with a driver who had been drinking or using drugs.

Depressive symptoms—The *Center for Epidemiologic Studies-Depression Scale* (CESD; Radloff, 1977) is a measure of depressive symptoms. The scale's 20 items are rated on a four-point scale from 0 (rarely or none of the time) to 3 (most or all of the time), and summed for a total scale score. In this study, the CESD had a Cronbach's alpha of 0.91.

Peer factors—The *Peer Substance Use and Tolerance of Substance Use* (Chassin, Rogosch, & Barrera, 1991) scales consist of seven items in which adolescents estimate how many of their friends use alcohol, marijuana, and other drugs occasionally and regularly. The scale also assesses how the adolescents think their close friends would feel about their using marijuana, alcohol and other drugs occasionally and regularly. In this study's sample, the Cronbach's alpha for peer substance use were .83 and .93, respectively. The *Child and Parent Peer Ratings and Social Skills* inventories (Dishion & Kavanagh, 2003) assess

interaction with prosocial and deviant peers and social preference. Deviant peers relationships were estimated by four items which asked about the percentage of friends that experimented with smoking and other substances, who misbehaved or broke rules, or who dressed like gang members. Involvement with prosocial peers was calculated by two items which examined the amount of time spent with friends that show interest and involvement in school. These items were rated on a five-point scale, from 1 (very few, less than 25%) to 5 (almost all, more than 75%). Separate scores were derived for parent and adolescent. In this study, the Cronbach's alphas for the parent measures were .81 and .83 for prosocial and deviant peers, respectively. The Cronbach's alphas for the adolescent measures were .72 and .60 for prosocial and deviant peers, respectively. Further, school and neighborhood social preference were assessed by two items asking adolescents to rate how many peers in their school and neighborhood were friendly and accepting of them.

Parental monitoring—The Parental Monitoring Scale (Cohen, Richardson & LaBree, 1994) was used to examine adolescents' perceptions of parental monitoring. Adolescents were asked to respond to five questions regarding their parent's knowledge and control over their whereabouts using a four-point scale ranging from 1 (very often) to 4 (never). Cronbach's alpha for this scale was .65. Parental monitoring was also measured using four questions derived from the *Strictness/Supervision Scale* (SSS; Steinberg, Lamborn, Dornbusch, & Darling, 1992) which consists of four questions asking both teens and parents about the extent to which the parent knew where the adolescent went at night, how the adolescent spent her or his time, where the adolescent went after school, and who the adolescent's friends were. Items are rated along a 4-point scale, ranging from 1 (doesn't know at all) to 4 (always knows). In this study, the adolescent scale had a Cronbach's alpha of .72; the parent scale's Cronbach's alpha was .88.

Parenting practices—The *Student Self Check* (SSC) was used to assess the adolescent's perception of their primary caregiver's family management and parental monitoring. Adolescents completed 14 items regarding the parental figure of their choosing (e.g. mother, father). Cronbach's alpha in the current study was .90. Parental involvement in schooling was examined using six items derived from the National Education Longitudinal Survey's (1998) *Parental Involvement Scale*. Adolescents were asked to report the frequency with which their parents were involved in their educational activities. Six items focused on parents involvement with homework, requirement of household chores, control over time spent watching television and on the internet, and limits on whether the adolescent can go out on school nights. Response categories ranged from 1 (Never) to 4 (Often). This measure yielded a Cronbach's alpha of .62.

Results

All dependent variables were checked for distributional assumptions and data transformations were made as necessary. Differences between White non-Hispanic and Hispanic adolescents were examined using paired samples t-tests. Overall, results revealed more similarities than differences between these two groups. Across all substance use variables, only one significant difference emerged (Table 1). Hispanic adolescents reported smoking a significantly lower number of cigarettes per day than did their White non-Hispanic counterparts. There were no significant differences between the two groups on alcohol use, marijuana use, or riding in a car with driver who had been drinking or using drugs.

No significant differences on depressive symptoms emerged between Hispanic and White non-Hispanic adolescents. Analyses conducted on social preference variables revealed only one difference between these two groups (Table 2). White non-Hispanic adolescents

perceived greater acceptance from their neighborhood environment than Hispanic adolescents. No significant differences emerged from analyses conducted on peer substance use and tolerance of use, peer affiliation, and acceptance from the school environment.

Finally, analyses conducted on parental monitoring and parenting practices revealed only one significant finding (Table 2). Parents' report of parental monitoring on the SSS indicated that Hispanic adolescents are being monitored less by their parents than are their White non-Hispanic counterparts. However, no significant differences were observed for adolescents' reports of parental monitoring. Similarly, no significant differences emerged on parental involvement in adolescents' school activities and on family management.

Discussion

The findings of the current study are consistent with findings from studies conducted on large community samples demonstrating little variability in Hispanic and White non-Hispanic adolescents' baseline risk profiles. However, the few significant differences that did emerge have important implications for intervention research and development. In this sample of adolescents, Hispanic adolescents perceived less acceptance from their home neighborhood environment than did White non-Hispanic adolescents. Given that previous studies have shown perceived discrimination to significantly influence psychological adaptation (Umaña-Taylor & Upedgraff, 2007) and substance use (Okamoto, Ritt-Olson, Soto, Baezconde-Garbanati, & Unger, 2009) among Hispanic youth, attention should be paid during counseling to helping adolescents cope with feelings of perceived neighborhood rejection, as it may affect their response to counseling. Further, according to the parents of the Hispanic adolescents in our sample, these adolescents were receiving less parental supervision when compared to the White non-Hispanic group. Research has identified parental supervision and monitoring (Stattin & Kerr, 2000; Leventhal & Brooks-Gunn, 2000) to be a protective factor against substance use problems and other risky behaviors. Therefore, prevention and intervention programs that focus on positive youth development and work towards enhancing adolescents' sense of belonging in their social environment and increasing parental monitoring and supervision may be beneficial for this particular ethnic minority group.

There was a significant difference on income level between Hispanic and White non-Hispanic adolescents in this sample, with White non-Hispanics reporting higher income. However, higher income level was significantly correlated with only one alcohol use variable, number of drinks per drinking occasion. This finding is consistent with previous studies indicating that alcohol use increases as income increases among adolescents (Goodman & Huang, 2002). Despite this significant correlation, no significant difference was found between Hispanics and White non-Hispanic on this alcohol use variable. There is the possibility that a significant difference between Hispanics and White non-Hispanics on this alcohol use variable may have been detected had the two groups been equal on income level.

Although more similarities rather than differences emerged in the baseline clinical profiles between the two groups, these similarities should not obscure the need to modify the direction and methodologies of substance use treatment research to serve the unique needs of Hispanic youth. The need to further examine how to best formulate future alcohol and other drug use treatments with this population is still very much needed for several reasons. First, although this study found no differences in baseline substance use, studies indicate that younger Hispanic substance use rates surpass those of White non-Hispanic adolescents (Johnston et al., 2008). These rates as well as their early initiation of use emphasize the need to identify contributing, as well as protective factors, and explore how these factors may be

incorporated into prevention and treatment development research. Second, although this study did not examine the influence of ethnocultural variables such as acculturation, ethnic identity and immigration experiences, these variables may be underlying factors in adolescents' substance use behaviors and their parents' supervision practices, and may affect Hispanic adolescents' amenability to alcohol interventions. Third, previous studies have shown treatment retention to be influenced by ethnicity and race (Austin & Wagner, 2006), thus suggesting that culture may indeed be an important predictor of treatment retention among ethnic minority youth. Therefore, despite presenting to treatment with similar profiles, there may be underlying cultural processes that may be influencing adolescents response and completion of treatment.

Limitations

There were several limitations to the current study which must be considered when interpreting the results. First, the sample size used in this study was relatively small, thus reducing statistical power. Analyses performed on a larger sample size of adolescent Hispanic and White non-Hispanics may have increased statistical power for detecting significant differences among the variables. However, participants in this study were matched on age, sex, and closest assessment date, thus eliminating the possibility that differences between groups were caused by differences on these variables. Second, participants were not able to be matched on income level due to missing income data and Hispanics having a significantly lower income level than White non-Hispanics. Third, the current study did not collect information regarding Hispanic adolescents' and their parents' nativity, immigration information, or nationality. Adolescents and their parents were solely asked if they identified themselves as Hispanic or Latino and categorized as Hispanic according to their response. Therefore, whether this is a highly acculturated sample of Hispanics or whether there is variability in terms of acculturation, and whether the adolescents in the sample were foreign born is not known, thus affecting the generalizability of this study's findings to other Hispanic populations. Fourth, all of the data in this study were obtained through participants' self report, which may have had an impact on the validity of the results.

Despite the limitations presented, this study addresses a significant gap in the adolescent substance abuse literature as past studies have failed to examine ethnic group differences among adolescent receiving treatment for alcohol-related incidents and have mainly focused on community samples. The findings of this study suggest a) White non-Hispanic and Hispanic adolescents have fairly similar baseline risk profiles; b) that particular attention should be paid to helping Hispanic adolescents cope with perceived neighborhood rejection, and enhancing prosocial peer affiliation and parental monitoring and supervision during the treatment course; and, c) future studies should examine whether treatment outcomes and retention vary between Hispanic and White non-Hispanic adolescents despite having similar profiles at baseline.

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Table 1
Differences in Substance Use and Teen Mood Variables by Ethnicity/Race

Variables	Hispanic		White non-Hispanic		N of pairs	t
	Mean	SD	Mean	SD		
Substance Use						
Drinking Days in Last 30 Days	3.04	5.66	3.40	4.32	38	-1.81
Drinks per Drinking Occasion in the Last 3 Months	5.21	1.85	5.05	1.66	38	.44
Binge Drinking Days in Last 30 Days	2.25	4.42	2.05	5.19	38	.22
Maximum Number of Drinks in Last 30 Days	7.97	4.57	9.66	6.94	38	-1.19
Rode in a Car with Impaired Driver	1.89	4.96	2.58	5.18	38	-.30
Marijuana Use Days in Last 30 Days	2.21	5.35	4.50	7.60	38	-1.61
Cigarettes per Day in Last 30 Days	1.19	2.99	5.38	9.15	37	-2.44*
Adolescent Drinking Inventory (ADI) Total Score	14.24	10.64	14.58	10.52	38	-.14
Depressive Symptoms						
Center for Epidemiologic Studies – Depression Scale Total Score	13.55	10.99	11.47	10.26	38	.81

Note. For the substance use variables, with exception of drinks per drinking occasion, maximum number of drinks, and ADI total score, analyses were conducted using transformed variables; however, means and standard deviations are in the original metric.

*
p<.05

Table II

Differences in Peer and Parenting Variables by Ethnicity/Race

Variables	Hispanic		White non-Hispanic		N of pairs	t
	Mean	SD	Mean	SD		
Peer Variables						
Peer Substance Use	1.21	.94	1.34	.88	38	-.61
Peer Tolerance of Substance Use	2.12	.98	2.40	.69	38	-1.50
Perceived Social Preference from School Environment	3.12	1.17	3.03	1.63	33	-.13
Perceived Social Preference from Neighborhood Environment	2.60	1.45	3.40	1.13	30	-2.35*
Deviant Peer Affiliation	2.46	.88	2.27	.99	38	.95
Prosocial Peer Affiliation	3.26	.81	3.29	.79	38	-.14
Deviant Peer Affiliation (parent report)	2.40	1.15	2.11	.93	33	1.20
Prosocial Peer Affiliation (parent report)	2.81	1.07	3.19	.97	34	-1.59
Parenting Variables						
Strictness and Supervision	3.10	.58	2.94	.68	38	1.10
Strictness and Supervision (parent report)	2.85	.86	3.26	.63	34	-2.21*
Parental Monitoring	3.09	.50	2.97	.49	38	1.13
Parental Involvement in Schooling	2.64	.54	2.45	.67	37	1.42
Family Management	7.15	1.74	6.99	1.62	38	.41

Note. Analyses for the Social Preference from School Environment variable were conducted using a transformed variable; however, the mean and standard deviation are reported in the original metric. Unless otherwise noted, measures were teen report.

*
p<.05