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Preimmigration Family Cohesion and Drug/Alcohol Abuse Among Recent Latino Immigrants

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Abstract

Given the growing population of Latino immigrants in the United States, it is critical for counselors to understand pre- and postimmigration social contextual factors affecting the mental health of this heterogeneous ethnic population. The objective of our cross-sectional, retrospective study was to investigate the potential protective influence of preimmigration family cohesion on drug/alcohol abuse just prior to migration among 527 Latino young adults (age 18–34 years). Multivariate Poisson regression indicated that preimmigration family cohesion was inversely related with harmful/hazardous alcohol consumption, the frequency/quantity of alcohol use, and illicit drug use when controlling for the potentially confounding sociodemographic factors of gender, age, education, income, marital status, and immigration status (documented or undocumented). Associations between family cohesion and drug/alcohol use behaviors varied between Central American immigrants and Caribbean/South American regional groups. Preimmigration findings offer a fuller contextual understanding of the lives of Latino young adult immigrants and support the importance of family cohesion as a buffer against drug/alcohol abuse.

Keywords

Latino immigrants; family cohesion; alcohol use; illicit drug use; young adults

Notwithstanding previous and ongoing epidemiological research on family dynamics and substance use among Latino populations in the United States, there is an apparent gap in knowledge concerning family cohesion and drug/alcohol abuse among Latinos that occurs prior to immigration to the United States. Information on preimmigration drug abuse and its sociocultural correlates can offer a fuller contextual understanding of the adaptation patterns and lives of Latino immigrants (Miranda, Estrada, & Firpo-Jimenez, 2000; Nee & Alba, 2004; Organista, Organista, & Kuraski, 2003). Additionally, preimmigration data can provide important background information that can be utilized by family counseling researchers, educators, and practitioners to better meet the needs of the growing Latino

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immigrant population in the United States (Drachman & Paulino, 2004). Hence, the current study examines a sample of Latino young adults (age 18–34 years) who had immigrated to Miami-Dade County, Florida, within the past 12 months. The investigation examines preimmigration family cohesion and its potential protective influence on drug/alcohol use just prior to immigration.

If current trends continue, the Latino population, already the largest ethnic minority group in the United States, will triple in size by 2050 and will account for more than half of the nation's population growth between 2010 and 2050 (Ennis, Ríos-Vargas, & Albert, 2011). A major source of this growth has been immigration. While demographers have observed the rapid growth of the U.S. Latino population, addiction researchers have documented considerable health disparities affecting the U.S. Latino immigrant population. Compared to other U.S. ethnic groups, Latinos experience disproportionately negative consequences of drug/alcohol abuse, such as intimate partner violence, incarceration for drug-related offenses, homelessness, HIV/AIDS, and other health disparities (Amaro, Arévalo, Gonzalez, Szapocznik, & Iguchi, 2006). Because culturally informed drug abuse interventions are lacking, U.S. Latinos are less likely to seek preventive and counseling services (Alegría et al., 2006; Both Gragg & Wilson, 2011; Moya & Shedlin, 2008). Thus, U.S. Latinos with substance use disorders often go without treatment. The present study aims to improve our understanding of preimmigration family dynamics and the influence of these dynamics on young adult Latino immigrants' drug/alcohol use behaviors prior to immigration. Such understanding may help to inform counseling services and help reduce drug/alcohol abuse and related health disparities among Latino young adults.

Family cohesion has been identified as a distinctive cultural protective factor against drug/alcohol abuse and psychological distress among U.S. Latinos (Marsiglia, Parsai, Kulis, & The Southwest Interdisciplinary Research Center, 2009; Rivera et al., 2008). Family cohesion has been conceptualized as the emotional bond that family members have with each other and an expression of belonging and acceptance within a family (Manzi, Vignoles, Regalia, & Scabini, 2006). Although the importance of family is found in many cultures (Schwartz, Weisskirch, et al., 2010), family cohesion in the Latino culture typically is hallmarked by close relations with nuclear and extended family members throughout the life span, including pronounced levels of loyalty, reciprocity, and solidarity (Galanti, 2003; Hovey & King, 1996). Much of the literature on family cohesion among U.S. Latinos has examined acculturation, broadly defined (in terms of immigration) as a process of change following immigration, as immigrants adjust to their new homeland and reconcile their heritage–cultural practices, values, and identifications with those of the receiving society (Berry, 1997). Acculturation is theorized to disrupt the traditional Latino value of *familismo or familism*—a term used to generally characterize the commitment of individuals to their nuclear and extended family (Gallo, Penedo, Espinosa de los Monteros, & Arguelles, 2009; Miranda, Bilot, Peluso, Berman, & Van Meek, 2006). The acculturation process and accompanying stress is posited to erode components of familism, thereby limiting the protective nature of family cohesion and the resiliency it provides against external stressors and related health outcomes (Marsiglia et al., 2009; Miranda et al., 2000; Myers & Rodriguez, 2003). While research on the effects of the acculturation process on Latino families in the United States has yielded critical information for family counselors, the potential protective link between Latino family cohesion and young adult drug abuse prior to immigration remains relatively unexamined.

The Present Study

The present study was guided by Bogenschneider's (1996) ecological risk/protective model and Bronfenbrenner's (1986) ecological theory of human development. Similar to the

concept of the Latino cultural value of familism, the ecological perspective suggests that the family represents the primary context for human development over the life span (Szapocznik & Coats-worth, 1999). Relations with parents and other family members play major roles in shaping patterns of life span development. Family dynamics extend well beyond childhood and adolescence, such that family influences continue to be important in adulthood (Overbeek, Stattin, Vermulst, Ha, & Engels, 2007). This may be especially true for Latinos, for whom familial bonds remain extremely important throughout the life span and for whom these bonds are generally influential against adult drug and alcohol abuse (De La Rosa et al., 2010).

Based on established associations between family cohesion and Latino drug/alcohol use behaviors among U.S. Latino families, we hypothesized that preimmigration family cohesion would be inversely correlated with preimmigration drug and alcohol use quantity and frequency as well as hazardous/harmful alcohol use, when controlling for relevant sociodemographic covariates (gender, age, education, income, marital status, and immigration status). Because Latinos are a heterogeneous population group and research has found differences in drug/alcohol use behaviors and in the relationship between family cohesion and psychological distress across Latino sub-ethnic groups (Caetano, Ramisetty-Mikler, & Rodriguez, 2009; Rivera et al., 2008), we examined the consistency of associations between family cohesion and drug/alcohol use behaviors across South American, Central American, and Caribbean regions of origin. We explored whether findings varied across these Latin American regions of origin due to differing contextual factors such as age structures, socioeconomic conditions, political stability, and migratory patterns (Rivera et al., 2008).

Method

Procedures

The present study was conducted using data from an investigation of the influence of preimmigration factors on health behaviors of recent Latino immigrants in Miami-Dade County, Florida. According to the study's inclusion criteria, participants are 18- to 34-year-old Latinos who had recently (less than 1 year) immigrated to the United States from a Latin American country. The study was approved by and conducted in compliance with the institutional review board at a large university in Miami. Participants were recruited through announcements posted at several community-based agencies providing legal services to refugees, asylum seekers, and other documented and undocumented immigrants in Miami. Information about the study was also disseminated at Latino community health fairs and neighborhood activity locales (e.g., domino parks in the Little Havana section of Miami). Announcements also were posted around Latino communities and electronic bulletin boards such as *Craig's List* and an employment website that Latinos access to seek work in Miami-Dade County.

Undocumented Latino immigrants are often a hidden population due to the sensitivity of their legal status in the United States. Therefore, respondent-driven sampling was the primary recruitment strategy for this investigation. This technique is an effective strategy in recruiting participants from hidden or difficult-to-reach populations (Salganik & Heckathorn, 2003). Given that undocumented immigrants represent approximately 25% of the U.S. Latino population (Passel & Cohn, 2008), respondent-driven sampling was considered to be the most feasible sampling approach. The approach involved asking each initial participant (*the seed*) to refer three other individuals in her or his social network who met the eligibility criteria for the study and consented to be interviewed. Those participants were then asked to refer three other individuals. The procedure was followed for seven legs

for each initial participant, at which point a new seed would begin, thus limiting the number of participants who were socially interconnected (Salganik & Heckthorn, 2003).

Informed consent procedures and assessment interviews were conducted in Spanish. Interviews were completed in a location agreed upon by both the interviewer and participant. Most interviews were administered either in a participant's home (61%) or at a restaurant/coffee shop (25%). The remaining interviews (14%) were completed at the participants' work, school, or other public location. All eight interviewers were bilingual Latinos of South American or Caribbean origin and all held college degrees (four undergraduate and four graduate degrees). Interviewers ranged from 23 to 48 years of age (M = 33.38, SD = 7.23).

Participants

The study sample included 527 recent Latino immigrants (45% female and 55% male). Ages ranged from 18 to 34 (M age = 26.95, SD = 4.98). Length of time in the United States at assessment ranged between 1 and 12 months (M = 6.74 months, SD = 3.11). The primary motive for immigration was economic reasons (58.8%). Approximately 70% of participants immigrated legally, whereas the remaining 30% were undocumented immigrants. Approximately 19% had college degrees, 34% had attended some college, 29% had a high school or equivalent degree, and 18% had not completed high school. Participants' average income during the 12 months prior to immigrating to the United States was approximately $4,840 ($SD$ = 10,236). The largest national origin group was Cubans (42%), followed by Colombians (18%), Hondurans (13%), and Nicaraguans (9%). Guatemalans, Venezuelans, and Peruvians each comprised about 3% of the sample. Mexicans, Bolivians, Uruguayans, Argentines, Chileans, Costa Ricans, Dominicans, Ecuadorians, Salvadorans, and Panamanians, each represented 2% or less of the sample.

Measures

Sociodemographic variables—A demographics form was used to assess participant gender, age, country of origin, marital status (coded 1 = *married/cohabitating* or 0 = *not married/not cohabitating*), length of time in the United States, education level (1 = *less than high school*, 2 = *high school*, 3 = *some training/college after high school*, 4 = *bachelor's degree*, 5 = *graduate/professional studies*), and participants' income during the 12 months prior to immigrating to the United States. The income variable was transformed into quartiles to facilitate analyses (i.e., 0 = $0 to $240, 1 = $248 to $1,200, 2 = $1,266 to $5,000, and 3 = *greater than* $5,184).

Documentation status—Participants were asked to report their current immigration status in the United States via a total of 14 possible categories, including temporary or permanent resident; tourist, student, and temporary work visa; undocumented; and expired visa, asylum, and temporary protected immigrant. These categories were then recoded into a dichotomous variable of *documented* (1) or *undocumented* (0) immigration status to facilitate analyses.

Drug and alcohol use—The *timeline follow-back interview* (*TLFB*; Sobell & Sobell, 1992) was administered to participants to document (a) quantity and frequency of alcohol use and (b) frequency of illicit drug use in the 90 days prior to immigration. TLFB data are collected using a calendar format to provide temporal cues (e.g., holidays and special occasions) to assist in recall of days when substances were used. A Spanish version of the TLFB, that has been suggested to be a reliable and valid measure with Latino populations, was used (Dillon, Turner, Robbins, & Szapocznik, 2005; Gil, Wagner, & Tubman, 2004). Daily alcohol use data are collected in number of standard drinks per day. Frequency of

alcohol and illicit drug use was indicated by total number of days that alcohol and illicit drugs were used during 90 days prior to immigration. Quantity of alcohol use was represented by the average number of drinks reported per drinking day during the 90-day assessment window. Data distribution of the quantity of alcohol use variable was positively skewed; therefore, we transformed it using a square root transformation to yield an approximately normal data distribution. The transformed variable was used in analyses and raw data values are reported in Table 1.

Hazardous/harmful alcohol use—*The Alcohol Use Identification Test* (*AUDIT*; Babor, Biddle-Higgins, Saunders, & Monteiro, 2001) was administered to participants to screen for problems related to alcohol consumption, abuse, and dependence during the 12 months prior to immigration. AUDIT total scores were used in analyses. Total scores are calculated by summing all 10 items. A psychometrically supported Spanish version of the AUDIT (Babor et al., 2001) was used. The instrument indicated acceptable evidence of reliability with Cronbach's α coefficients of .95 for the total and three separate Latin American regional groups.

Family cohesion—The *family cohesion* subscale from the *family functioning scale* (FFS; Bloom, 1985) was used to assess family cohesion during the participant's life span before immigrating to United States. The FFS is a family functioning measure that produces scores with acceptable psychometric properties (Bloom, 1985; Grotevant & Carlson, 1989). The family cohesion scale contains five items and uses a 4-point Likert-type scale response format (1 = *very untrue*, 2 = *fairly untrue*, 3 = *fairly true*, and 4 = *very true*). Sample items include "Family members really helped and supported one another" and "Family members seemed to avoid contact with one another (reverse scored)." The *family cohesion* scale score is the average of scale items. The measure was translated into Spanish for the present study. Specifically, the English version of the FFS went through a process of (a) translation/back translation, (b) modified direct translation, and (c) checks for semantic and conceptual equivalence to ensure accurate conversion from English to Spanish. In an effort to account for any within-group variability, a review panel for the modified direct translation consisted of individuals from various Latino subgroups representative of the Miami-Dade county population. The *family cohesion* subscale yielded an acceptable Cronbach's α coefficient of .79 for the overall sample and a Cronbach's α coefficient of .77 for participants from each of the Latin American regions of origin.

Data Analyses

Data analyses proceeded in three steps. First, to uncover potential within-group differences between participants, we explored differences in (a) sociodemographic characteristics, (b) preimmigration family cohesion, and (c) drug/alcohol use behaviors across the three primary Latin American regions of origin (Caribbean, Central American, and South American). An analysis of variance was used to assess potential regional differences in participants' age, preimmigration income, education, family cohesion, alcohol use quantity, and hazardous/harmful alcohol use. We also cross-tabulated region by gender, marital status, immigration status, and engagement in drinking and illicit drug use.

Second, we used Mplus statistical software (Muthén & Muthén, 2007) to regress each of the preimmigration drug use behaviors on preimmigration family cohesion in a single path model. We used multivariate Poisson regression analysis for the aforementioned drug and alcohol use frequency variables that followed a Poisson (skewed) distribution, where the most frequently occurring response is zero. In addition, we used *multiple indicators, multiple causes* (MIMIC; Bollen, 1989) modeling to include covariates (gender, age, education, income, marital status, and immigration status) in the model. Through MIMIC

modeling, preimmigration family cohesion and drug use behaviors were all regressed on covariates in the path model.

Third, mixture modeling was used to test the extent to which associations between preimmigration family cohesion and drug/alcohol use behaviors were consistent across Latin American regions of origin. The distribution of participants' countries of origin allowed us to assign participants into groups for within-Latino sample comparisons: Caribbean (Cuban n = 222 and Dominican n = 7; 42.1% of total sample), Central American (Honduras n = 66, Nicaragua n = 46, Guatemala n = 18, Mexico n = 11, El Salvador n = 10, Costa Rica n = 3, and Panama n = 1; 29.4% of total sample), or South American (Columbia n = 93, Peru n = 15, Venezuela n = 14, Argentina n = 10, Ecuador n = 4, Uruguay n = 3, Bolivia n =3, and Chile n = 1; 27.1% of total sample).

Results

Sociodemographic Differences Across Latin American Regions of Origin

As shown in Table 1, relative to the overall composition of the sample, Central American participants were disproportionately male (71.6%), and South American participants were disproportionately female (58.7%). Caribbean participants constituted the youngest group, whereas South and Central American participants were similarly aged. Central American participants reported the lowest education levels, whereas South American participants reported the highest. Caribbean participants reported the lowest preimmigration incomes, whereas South American participants reported the highest pre-immigration incomes. Caribbean participants (39.6%) were more likely to be married compared to their Central American counterparts (26.5%). Finally, the majority (85.2%) of Central American participants reported being undocumented, compared to only 18.2% of South Americans. Cuban participants were all documented as political refugees, and only one of the seven Dominican participants reported undocumented immigration status.

Family Cohesion and Drug Use Behavior Across Latin American Regions of Origin

As shown in Table 1, Caribbean participants reported the highest levels of family cohesion, and Central American participants report the lowest levels. Caribbean participants also reported the least engagement in preimmigration drug use, hazardous/harmful drinking, and quantity of alcohol use. Central and South American participants reported statistically equivalent rates of engagement in preimmigration drug use, hazardous/harmful drinking, and quantity of alcohol use. South American participants reported the highest levels of engagement in preimmigration drinking. Central American and Caribbean immigrants reported statistically equivalent engagement in alcohol use.

Drug/Alcohol Use Behavior by Family Cohesion

We estimated a model in which family cohesion predicted drug/alcohol use behaviors. As previously noted, the responses to the frequency of drug and alcohol use items followed a Poisson distribution. We, therefore, analyzed these variables using multivariate Poisson regression (Atkins & Gallop, 2007), where taking the inverse log of the regression coefficient yields an incidence rate ratio (IRR). The IRR represents the multiplicative extent to which the expected count would be estimated to increase or decrease with each 1-unit increase in the predictor variable. Another critical issue in the analyses of count variables is the extent to which zeroes dominate the frequency distribution. When 80% or 90% of participants report no engagement in the target behavior, zero-inflated Poisson (ZIP) models (Atkins & Gallop, 2007) are recommended, in which the zeroes are modeled separately from the nonzero count data (Schwartz, Forthun, et al., 2010). In ZIP modeling, the count variable is split into two components: a dichotomous indicator reflecting whether or not a participant

engaged in the target behavior and a count variable reflecting how many times the person engaged in the behavior. For participants who report no engagement in the behavior, the count variable is specified as missing.

Approximately 32% of participants reported no use of alcohol 90 days prior immigration; therefore, frequency and quantity of alcohol use were modeled as simple count outcomes using Poisson regression. Regression coefficients for alcohol use frequency are expressed as IRRs. Data distributions for the hazardous/harmful drinking and transformed quantity of alcohol use variables were approximately normal, thus standard regression coefficients (β) are reported. Approximately 87% of participants reported no illicit drug use 90 days prior to immigration; thus, it was analyzed using a ZIP model. Regression coefficients for illicit drug use frequency are expressed as odds ratios (ORs) for dichotomous component and as IRRs for count component.

Results of the multivariate Poisson regression analysis are presented in Table 2. In the aggregate sample, preimmigration family cohesion was negatively related to (a) alcohol use frequency and quantity, (b) harmful/hazardous alcohol use, and (c) engagement in illicit drug use, when statistically controlling for sociodemographic covariates (marital status, income, education, age, and gender). Alcohol use frequency decreases by 13% given a 1 *SD* increase in family cohesion. For engagement in illicit drug use, each standard deviation increase in family cohesion is associated with a 33% decrease in the odds of illicit drug use. Family cohesion was not related to the frequency of illicit drug use among drug using participants.

Drug Use Behavior by Sociodemographic Covariates

Several sociodemographic covariates were also related to pre-immigration family cohesion and drug/alcohol use behaviors in the aggregate sample. Participants who had documented immigration status reported higher preimmigration family cohesion ($\beta = .40$, $p < .001$, 95% confidence interval [CI] = [.19, .62]) and more alcohol use frequency compared to those who were undocumented (see Table 2). Single participants, those with higher incomes, and males reported (a) more frequent alcohol use, (b) more hazardous/harmful drinking, and (c) greater quantities of alcohol use. Younger participants, males, and those with higher incomes also were more likely to engage in illicit drug use. Among participants who engaged in illicit drug use, males and participants with higher incomes reported more frequent use.

Invariance Across Latin American Regions of Origin

Next, we examined the extent to which the relationships between family cohesion and drug/alcohol use behaviors were consistent across Latin American regions of origin. Mixture models, using region of origin as a "known class" variable, can be used to test for invariance in models with dichotomous and count variables (Muthén & Muthén, 2007; Schwartz, Forthun, et al., 2010). As in standard multigroup invariance testing, the fit of an unconstrained model (i.e., with all paths from family cohesion to drug use behaviors free to vary across region of origin) is compared against the fit of a model with these paths constrained to be equal. The invariance test is conducted by computing the difference between the −2 log likelihood values for the constrained versus unconstrained models (Schwartz, Forthun, et al., 2010). This difference is distributed and interpreted as a $\Delta\chi^2$ value. If the $\Delta\chi^2$ value is not significant, the model can be assumed to fit equivalently across groups (i.e., invariant).

Results indicated that the relationship of family cohesion to drug and alcohol use behaviors was significantly different across regions of origin, $\Delta\chi^2(10) = 135.33$, $p < .001$. We,

therefore, examined each path for inconsistency across regions. Following Byrne (2009), we returned to the unconstrained model and constrained one path at a time to identify the path/paths responsible for the nonequivalence. Constraining associations between family cohesion and hazardous/harmful drinking, $\Delta\chi^2(2) = 1.58$, $p = .45$; quantity of alcohol use, $\Delta\chi^2(2) = 0.84$, $p = .66$; and engagement in illicit drug use, $\Delta\chi^2(2) = 2.49$, $p = .29$, resulted in nonsignificant $\Delta\chi^2$ values. These findings suggested consistencies across regions in the associations between family cohesion and each of these behaviors. However, after constraining associations between family cohesion and frequency of drug and alcohol use, −2 log likelihood values still resulted in significant $\Delta\chi^2$ values, suggesting that inconsistencies across regions were due to differences other than the associations between family cohesion and drug/alcohol use frequency alone.

Given these findings, we next compared the strength of associations between family cohesion and hazardous/harmful drinking, quantity of alcohol use, and engagement in illicit drug use across regions of origin (see Table 3). The inverse relationship between family cohesion and engagement in illicit drug use was significant for Caribbean and South American immigrants and not significant for Central American immigrants. Odds ratios indicated that, for Caribbean and South American participants, respectively, each standard deviation increase in family cohesion is associated with a 46% and 43% decrease in the risk of illicit drug use. Similarly, the negative link between family cohesion and hazardous/harmful drinking was significant for Caribbean and South American participants only. Finally, family cohesion was significantly related to quantity of alcohol use for South American participants only.

Discussion

The present study contributes to the emerging literature on U.S. Latinos by studying rarely considered preimmigration family cohesion and drug/alcohol use behaviors of Latino young adults. Existing literature has highlighted family cohesion as a source of strength and resiliency that protects U.S. Latinos against acculturative stress and concomitant health risk behaviors (e.g., Marsiglia et al., 2009; Miranda et al., 2000, 2006). However, little is known about whether preimmigration family cohesion similarly functions as a protective factor against drug/alcohol use behaviors prior to immigration. Hence, in an effort to inform counselors working with the growing Latino immigrant population in the United States, the present exploratory study advances family counselors' knowledge concerning the potential protective role of family cohesion in the lives of young adult Latino immigrants, while describing heterogeneity across Latin American region of origin.

Aggregate Sample Findings

It is noteworthy that average alcohol use quantity rates were almost at binge drinking levels (i.e., 4 [for women] or 5 [for men] or more drinks on a single drinking occasion) across the total sample, suggesting problematic alcohol use consumption (National Institute of Alcohol Abuse and Alcoholism, 2004). It is also notable that preimmigration drug/alcohol use behaviors varied across several sociodemographic contexts. Similar to findings from studies of U.S. Latinos, unmarried/unpartnered participants, those with higher incomes, and men all reported more hazardous drug and alcohol use behaviors just prior to immigration (Alvarez, Jason, Olson, Ferrari, & Davis, 2007; Caetano et al., 2009). U.S. Latinos with higher incomes are thought to have more access to drugs and alcohol. The adult social roles perspective posits that being married generally decreases the likelihood of heavy drinking and substance use problems because accompanying responsibilities are incompatible with drug/alcohol use behaviors (Bachman et al., 2002). Literature on gender differences in substance use among Latinos has suggested the presence of cultural norms thought to

discourage substance use by women by promoting abstinence—which, in the present findings, may protect Latinas from drug/alcohol abuse in their countries of origin (e.g., Caetano et al., 2009; Welte & Barnes, 1995). Interestingly, participants who had immigrated legally reported more *frequent* alcohol use prior to immigration but not more problematic use. This finding may be due to a nominal increase in alcohol use frequency in association with farewell celebrations occurring in anticipation of a planned departure for documented immigrants only.

Participants who reported a *documented* immigration status reported higher preimmigration family cohesion, which may be an artifact of the highest levels of family cohesion evidenced by Caribbean immigrants. As per the "wet foot, dry foot" law passed during the Clinton administration, Cuban immigrants become citizens upon setting foot on U.S. soil. Family cohesion has been suggested to be a particularly strong cultural norm among Cubans (Bernal & Shapiro, 2005). Cubans are thought to have more opportunities to promote family cohesion in comparison to other Latino groups such as South Americans and Puerto Ricans. Cubans are more stationary due to a relative inability to migrate to and from the United States in comparison to other groups. Thus, Cubans may not separate from family in difficult political or economic circumstances or avoid negative family patterns by freely moving away from family like adults from other groups can due to U.S. citizenship (Puerto Ricans) or more socioeconomic resources (South Americans; Rivera et al., 2008). More research is needed to examine whether migratory patterns influence family cohesion among Latino immigrant adults.

Consistent with previous studies of U.S. Latinos, higher pre-immigration family cohesion was linked with lower levels of engagement in illicit drug use, less harmful/hazardous alcohol use, and lower frequency and quantity of alcohol use in the aggregate sample. Perhaps maintaining very close family relations over the life span is an indicator of an individual's stronger adherence to protective traditional cultural norms even *within* one's country of origin. Like the acculturation process in the United States and its related stress, a wide range of pre-immigration personal, cultural, and social contextual factors (e.g., poverty, political instability and history, and social networks) are likely to challenge family cohesion and the resiliency it provides. Thus, additional research should consider how preimmigration social contexts and variations in traditional cultural values operate as potent determinants of variations in family dynamics and drug/alcohol abuse before the acculturation process (Ayón, Marsiglia, & Bermudez-Parsai, 2010; Lopez-Class, Gonzalez Castro, & Ramirez, 2011).

Latino Subethnic Group Differences

To date, most studies either sample one predominant Latino subgroup (e.g., Mexican Americans) or overlook substantive within-Latino group differences when reporting findings. In the present study, regional differences were found across (a) socio-demographic conditions, (b) extent of drug/alcohol use behaviors, and (c) the strength of relations between preimmigration family cohesion and drug/alcohol use behaviors. Caribbean participants, most of whom were from Cuba, were the youngest group of participants. Yet, despite their relative youth, Caribbean immigrants reported the least preimmigration drug use, problematic drinking, and quantity of alcohol use. In fact, Caribbean participants were the only group to, on average, report less than binge drinking levels per drinking occasion. They also reported the lowest preimmigration incomes, which is consistent with previously mentioned research, suggesting U.S. Latinos with lower incomes have less access to drugs and alcohol (Caetano et al., 2009).

Central American participants were the least educated, and most predominantly male, immigrant group. They also were more likely to be undocumented. Central Americans

indicated the lowest levels of family cohesion, potentially due to socio-political and economic instability and higher levels of separation from families during undocumented migration in comparison to the other regional groups (Hernandez, 2005; Mitrani, Santisteban, & Muir, 2004). Central Americans also reported more preimmigration drug use, hazardous/problematic drinking, and quantity of alcohol use than their Caribbean counterparts but less frequent engagement in alcohol use than their South American counterparts. Family cohesion and its potential protective effects may be more vulnerable to the high levels of poverty and political instability in Central American countries over the participants' life spans. Families of Central American participants also may have been negatively affected by less educational or economic resources in comparison to other Latin American regions (Rivera et al., 2008). In fact, Central American immigrants more frequently reported financial reasons for immigrating to the United States, in comparison to other immigrant groups. Conversely, South Americans indicated the highest preimmigration incomes and education levels. Interestingly, the South American subgroup also consisted of more women than either of the other subgroups. Finally, South American participants reported the highest engagement in alcohol use (but not problematic use) in comparison to all groups and differed from Caribbean immigrants in all drug/alcohol use behaviors.

Given regional differences in sociodemographic variables and drug/alcohol use behaviors, it is not surprising that we found inconsistencies in the magnitude of relations between preimmigration family cohesion and several drug/alcohol use behaviors between regions of origin. Preimmigration family cohesion seems potentially protective against hazardous/harmful alcohol use and illicit drug use prior to immigration for South American and Caribbean immigrants but not for Central Americans. As previously noted, it may be that cohesion of the family in Central America is overwhelmed by poverty, violent sociopolitical turmoil, and less coping resources across the life span potentially leading to a diminished protective influence of family cohesion against problematic drug/alcohol use (Miranda & Matheny, 2000). Another reason for the inconsistent findings could be the unique characteristics of the Central American sample. That is, most Central American participants were young, undocumented men. Their alcohol and drug abuse just prior to immigration may be influenced to a greater extent by unhealthy attempts to cope with stresses due to their pending migration with undocumented immigration status (Cannon & Levy, 2008; Vlach, 2003). Finally, the inverse link between family cohesion and quantity of alcohol use was only significant for South American participants. Thus, counselors should note that the link between family cohesion and indicators of problematic drinking seems strongest for South American immigrants, suggesting a particularly strong protective role of family cohesion against alcohol abuse among young adults in this subethnic group.

Implications for Counseling and Future Research

Findings concerning the importance of preimmigration family cohesion have important implications for family counselors who work with recent Latino immigrants, as well as for family counseling researchers interested in reducing drug abuse and related health disparities among this underserved population. As the number of Latinos residing in the United States grows in part due to immigration, the need to assist immigrants in making smooth transitions into American society is increasingly imperative (Hernandez, Denton, & Macartney, 2008). Family cohesion represents a protective Latino cultural value, the protective effects of which may vary across Latino regions of origin due to differing sociopolitical, economic, and cultural contexts. Family counselors working with recent Latino immigrants are encouraged to assess preimmigration family cohesion and its potential contribution to drug and alcohol problems presented by recent Latino immigrants. Interventions delivered to promote family cohesion may be more culturally adaptive and may exert a greater therapeutic or preventive

influence against drug and alcohol abuse (Both Gragg & Wilson, 2011; Paynter & Estrada, 2009).

Limitations

The present findings should be interpreted in light of several limitations. The first limitation is the use of respondent-driven sampling. Although respondent-driven sampling has been successful in recruiting hidden populations such as undocumented immigrants, it does not generate representative samples. Second, although efforts were undertaken to include participants from major Latino subethnicities, some groups (e.g., Mexican American and Puerto Rican) were not well represented due to their underrepresentation in the Miami-Dade County area in general. Future studies of preimmigration behaviors are needed with more representative samples to enhance the generalizability of results. Third, given sample size limitation, we could only analyze within-Latino group differences based on regions of origin. There may be important variations between and among countries within a given region of origin (e.g., Colombians vs. Peruvians or Hondurans vs. Nicaraguans). Further research is needed to examine the consistency of findings across different countries of origin. Finally, the cross-sectional nature of the data does not allow for causal inferences regarding preimmigration drug/alcohol abuse and family cohesion. Longitudinal studies are needed to determine whether family cohesion precedes or is a consequence of drug/alcohol use behaviors.

Conclusion

Despite these limitations, this study contributes to the limited knowledge on family cohesion and drug/alcohol use patterns of Latino immigrants prior to arriving in the United States. Future research on pre- and postimmigration family cohesion may provide valuable information to counselors on the underlying factors that influence drug/alcohol use and related mental health issues among Latino immigrants. Moreover, given the distinct sociocultural composition and migration patterns of each Latino immigrant subethnicity, we join other researchers in recommending continued counseling-related research on differences in family dynamics among subethnicities and how these differences impact mental health outcomes. Such research is of critical importance, as it may inform prediction, prevention, and treatment of drug/alcohol use behaviors among various components of the largest and fastest growing ethnic minority group in the United States.

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Table 1

Summary of Demographics, Family Cohesion, and Drug/Alcohol Use Behaviors Across Latin American Regional Groups

Variable	Central American[a] (*n* = 155)	Caribbean[b] (*n* = 229)	South American[c] (*n* = 143)	Total (*n* = 527)	Regional Group Difference Tests
Gender[a]	Males = 111 (72%) Females = 44 (28%)	Males = 118 (52%) Females = 111 (48%)	Males = 59 (41%) Females = 84 (59%)	Males = 288 (55%) Females = 239 (45%)	*a* vs. *b*: $\chi^2(1, N = 384) = 14.28$, $p < .001$, $\eta = .20$ *a* vs. *c*: $\chi^2(1, N = 298) = 27.97$, $p < .001$, $\eta = .31$ *b* vs. *c*: $\chi^2(1, N = 372) = 4.21$, $p = .04$, $\eta = .11$
Age	*M* = 27.39 *SD* = 4.95	*M* = 26.02 *SD* = 5.08	*M* = 28.03 *SD* = 4.63	*M* = 26.98 *SD* = 4.96	$F(2, 526) = 8.11$, $p < .001$, $ç = .17$ *a* > *b*, *p* = .01 *c* > *b*, *p* < .001 *a* = *c*, *p* = .25
Education[b]	*M* = 1.79 *SD* = 1.00	*M* = 2.82 *SD* = 0.81	*M* = 3.04 *SD* = 1.01	*M* = 2.57 *SD* = 1.06	$F(2, 526) = 82.16$, $p < .001$, $ç = .49$ *a* < *b*, *p* < .001 *a* < *c*, *p* < .001 *b* < *c*, *p* = .02
Annual income—1 year prior to immigration[c]	*M* = 1.60 *SD* = 0.90	*M* = 0.77 *SD* = 0.91	*M* = 2.36 *SD* = 0.97	*M* = 1.46 *SD* = 1.13	$F(2, 526) = 129.97$, $p < .001$, $ç = .58$ *a* > *b*, *p* < .001 *a* < *c*, *p* < .001 *b* < *c*, *p* < .001
Marital status[d]	*Married/Cohabitating* = 41 (27%) *Not Married/Not Cohabitating* = 114 (73%)	*Married/Cohabitating* = 91 (40%) *Not Married/Not Cohabitating* = 138 (60%)	*Married/Cohabitating* = 49 (34%) *Not Married/Not Cohabitating* = 94 (66%)	*Married/Cohabitating* = 181 (34%) *Not Married/Not Cohabitating* = 346 (66%)	*a* vs. *b*: $\chi^2(1, N = 384) = 7.05$, $p = .01$, $\eta = .14$ *a* vs. *c*: $\chi^2(1, N = 298) = 2.15$, $p = .14$, $\eta = .09$ *b* vs. *c*: $\chi^2(1, N = 372) = 1.07$, $p = .30$, $\eta = .05$
Documentation status[e]	*Documented* = 23 (15%) *Undocumented* = 132 (85%)	*Documented* = 228 (99.9%) *Undocumented* = 1 (<. 01%)	*Documented* = 113 (79%) *Undocumented* = 26 (21%)	*Documented* = 364 (69%) *Undocumented* = 159 (31%)	*a* vs. *c*: $\chi^2(1, N = 298) = 134.41$, $p < .001$, $\eta = .67$ *a* vs. *b*: and *b* vs. *c*: not calculated due to fewer than 3 per cell
Family cohesion	*M*= 3.34 *SD* = 0.62	*M*= 3.71 *SD* = 0.44	*M* = 3.61 *SD* = 0.47	*M* = 3.57 *SD* = 0.53	$F(2, 526) = 24.97$, $p < .001$, $ç = .30$ *a* < *b*, *p* < .001 *a* < *c*, *p* < .001 *b* > *c*, *p* = .04
Engagement in drug use—90 days prior to immigration	*No* = 129 (83%) *Yes* = 26 (17%)	*No* = 219 (96%) *Yes* = 10 (4%)	*No* = 111 (78%) *Yes* = 32 (22%)	*No* = 459 (87%) *Yes* = 68 (13%)	*a* vs. *b*: $\chi^2(1, N = 384) = 16.75$, $p < .001$, $\eta = .21$ *a* vs. *c*: $\chi^2(1, N = 298) = 1.49$, $p = .22$, $\eta = .07$ *b* vs. *c*: $\chi^2(1, N = 372) = 28.51$, $p < .001$, $\eta = .28$
Engagement in alcohol use—90 days prior to immigration	*No* = 62 (40%) *Yes* = 93 (60%)	*No* = 82 (36%) *Yes* = 147 (64%)	*No* = 22 (15%) *Yes* = 121 (85%)	*No* = 166 (32%) *Yes* = 361 (68%)	*a* vs. *b*: $\chi^2(1, N = 384) = 0.69$, $p = .41$, $\eta = .04$ *a* vs. *c*:

Variable	Central American[a] (*n* = 155)	Caribbean[b] (*n* = 229)	South American[c] (*n* = 143)	Total (*n* = 527)	Regional Group Difference Tests
					$\chi^2(1, N = 298) = 22.64, p < .001, \eta = .27$ *b* vs. *c*: $\chi^2(1, N = 372) = 18.23, p < .001, \eta = .22$
Quantity of alcohol use—90 days prior to immigration	*M* = 5.99 *SD* = 11.39	*M* = 3.57 *SD* = 9.30	*M* = 5.65 *SD* = 6.65	*M* = 4.85 *SD* = 9.42	*F*(2, 526) = 3.79, *p* =.02, ç = .12 *a* > *b*, *p* =.01 *a* = *c*, *p* = .09 *b* < *c*, *p* < .001
Hazardous/harmful drinking	*M* = 7.06 *SD* = 7.47	*M* = 3.91 *SD* = 4.50	*M* = 6.99 *SD* = 6.10	*M* = 5.70 *SD* = 6.15	*F*(2, 526) = 11.80, *p* < .001, ç = .25 *a* > *b*, *p* < .001 *a* = *c*, *p* = .91 *b* < *c*, *p* < .001

Note.

[a] 0 = *female*, 1 = *male*.

[b] 1 = *less than high school*, 2 = *high school*, 3 = *some training/college after high school*, 4 = *bachelor's degree*, 5 = *graduate/professional studies*.

[c] 0 = $0 to $240, 1 = $248 to $1,200, 2 = $1,266 to $5,000, 3 = $5,184+.

[d] 0 = *not married/not cohabitating*, 1 = *married/cohabitating*.

[e] 0 = *undocumented*, 1 = *documented*.

Table 2

Drug/Alcohol Use Behaviors by Family Cohesion and Sociodemographic Variables (Estimates and 95% Confidence Intervals)

	Family Cohesion Lifetime	Gender[a]	Age	Education[b]	Annual Preimmigration Income[c]	Marital Status[d]	Documentation Status[e]
Alcohol use frequency—90 days prior to immigration							
IRR	.87* [.76, .99]	1.96*** [1.47, 2.63]	1.01 [.98, 1.04]	1.11 [.95, 1.28]	1.37*** [1.20, 1.57]	.68* [.50, .93]	2.06*** [1.42, 3.00]
Alcohol use quantity—90 days prior to immigration							
β	−.11** [−.19, −.02]	.33*** [.26, .39]	.01 [−.08, .09]	.03 [−.05, .11]	.20*** [.13, .28]	−.14* [−.21, −.07]	.06 [−.04, .15]
Harmful/hazardous drinking							
β	−.17*** [−.26, −.08]	.32*** [.24, .39]	−.01 [−.09, .07]	.01 [−.08, .08]	.19*** [.11, .27]	−.13*** [−.20, −.05]	−.01 [−.10, .09]
Engagement in illicit drug use—90 days prior to immigration							
OR	.67*** [.53, .84]	2.08** [1.19, 3.63]	.91** [.85, .97]	1.17 [.90, 1.52]	1.95*** [1.46, 2.59]	0.91 [.48, 1.73]	0.61 [.33, 1.15]
Frequency of illicit drug use—90 days prior to immigration							
IRR	1.01 [.79, 1.27]	2.24** [1.06, 4.76]	1.03 [.98, 1.09]	.86 [.67, .1.24]	1.47* [1.05, 2.05]	0.96 [.51, 1.80]	1.09 [.61, 1.97]

Note. IRR = incidence rate ratio; OR = odds ratio.

[a] 0 = *female*, 1 = *male*.

[b] 1 = *less than high school*, 2 = *high school*, 3 = *some training/college after high school*, 4 = *bachelor's degree*, 5 = *graduate/professional studies*.

[c] 0 = $0 to $240, 1 = $248 to $1,200, 2 = $1,266 to $5,000, 3 = $5,184+.

[d] 0 = *not married/not cohabitating*, 1 = *married/cohabitating*.

[e] 0 = *undocumented*, 1 = *documented*.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3

Differences in Family Cohesion—Drug/Alcohol Use Behaviors Association by Latin American Regions of Origin (Estimates and 95% Confidence Intervals)

	Central American (*n* = 155)	Caribbean (*n* = 229)	South American (*n* = 143)
Alcohol use quantity—90 days prior to immigration			
β	−.09 [−.20, .03]	−.07 [−.17, .03]	−.12* [−.24, −.01]
Harmful/hazardous drinking			
β	−.11 [−.27, .02]	−.12* [−.24, −.01]	−.23* [−.42, −.05]
Engagement in illicit drug use—90 days prior to immigration			
OR	.79 [.60, 1.04]	.54** [.35, .82]	.57* [.36, .89]

Note.

* $p < .05$.

** $p < .01$.