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Alcohol Use among Recent Latino Immigrants Before and After Immigration to the United States

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Abstract

Background—US-born Latinos have higher rates of alcohol use than Latinos who have immigrated to the United States. However, little is known about the pre-immigration drinking patterns of Latino immigrants or about the changes in their drinking behaviors in the 2 years post-immigration.

Objectives—This article reports findings of a longitudinal study that compared rates of regular, binge, and heavy drinking among a cohort of recent Latino immigrants, ages 18–34, prior to immigration to the United States and in the 2 years post-immigration.

Methods—Baseline data were collected on the drinking patterns of 405 Latino immigrants living in the United States for 12 months or less. A follow-up assessment occurred during their second year in the United States.

Results—Findings indicate that number of days of drinking declined significantly post-immigration. Binge alcohol use (five or more drinks on the same occasion during the past 90 days) significantly declined during the post-immigration period. Heavy alcohol use (five or more drinks on the same occasion on five or more days during the past 90 days) also significantly decreased.

Conclusions—Results suggest a need for continued exploration of pre-immigration drinking patterns and research to uncover underlying factors associated with declines in rates of problematic alcohol use among recent Latino immigrants.

Scientific Significance—The results of this study can aid in furthering our understanding of the alcohol use of Latino immigrants ages 18–34 prior to and post immigration to the United States to guide future research and the development of culturally tailored clinical interventions. (*Am J Addict* 2013;22:162–168)

INTRODUCTION

During the past decade, extensive research has been conducted on the health of Latino immigrants in the United States (US).^{1–3} Excessive alcohol use/abuse among young adult Latinos (ie, ages 18–34) has become an emergent health concern.^{3–6} Specifically, binge and heavy drinking episodes of alcohol use affect the physical and emotional well-being of adult Latinos in the US.⁷ Latinos in the US experience disparate negative consequences resulting from substance use disorders, including intimate partner violence, incarceration,

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Declaration of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this paper.

homelessness, and medical ailments.⁸ US-born Latinos ages 18–34 exhibit more binge and heavy drinking episodes of alcohol misuse compared to foreign-born Latinos of the same age residing in the US.⁹ Research has also documented that for Latinos, patterns of regular and problematic alcohol use increase as length of time living in the US increases.^{3,10}

However, most of the research on the alcohol use patterns of Latino immigrants has been conducted on samples of Latinos after immigration to the US, lacking the pre-immigration information needed to assess drinking behavior changes post-immigration.¹¹ Moreover, much of the data collected on the drinking behaviors of Latino immigrants has occurred years after immigration to the US.^{12,13} Few studies have included sub-samples of the recent immigrant population.^{12,13} To our knowledge, no studies have documented drinking trends among young adult recent Latino immigrants in the first 2 years after arrival to the US, nor have any compared Latinos' post-immigration alcohol use to their pre-immigration patterns. As previous research on Latino immigrants indicates, Latino immigrants face significant stress resulting from adjustment to a new culture and lifestyle, which may affect their current and future health status.^{14,15} Investigating the alcohol use behavior of recent Latino immigrants, most of whom are relatively young and thus at high risk for alcohol abuse, prior to and in their first 2 years in the US, may yield important information on the health status of these immigrants given the deleterious health and social consequences associated with alcohol abuse.^{16,17} Documenting the alcohol use behaviors of young adult Latinos will (a) lead to a better understanding of the alcohol use patterns of recent Latino immigrants residing in the US in the 2 years after arrival and (b) begin to address a gap in the literature which suggests that the longer Latino immigrants reside in the US, the higher their rates of alcohol abuse will be.¹⁸ These findings can provide the foundation for the development of more effective culturally tailored alcohol prevention and treatment programs for recent young adult immigrants, which can lead to a reduction in their rate of problematic alcohol consumption.

Purpose

The primary aim of this article is to document the findings from a study that investigated whether there are any significant differences in rates of regular, binge, and heavy drinking among a cohort of recent Latino immigrants, ages 18–34, during the 90 days prior to immigrating to the US in comparison with their post-immigration alcohol use in the 24 months after immigration to the US.

Significance

The results of this study can aid in furthering our understanding of the alcohol use of Latino immigrants ages 18–34 prior to and in the 2 years after immigration to the US to guide future research and the development of culturally tailored clinical interventions.

METHODS

Sample

Data were collected from 527 Latino immigrants living in Miami-Dade County, FL, at baseline assessment within 12 months after arrival to the US. A follow-up interview was conducted with 405 of the baseline participants yielding a retention rate of 77%. The study's research protocol was approved by the Institutional Review Board at Florida International University (Miami, FL).

The sample consists of 405 cases (51% female; 49% male). In accordance with eligibility criteria, ages at baseline ranged from 18 to 34 years (M age = 26.95, SD = 4.98). Participants included recent immigrants from Cuba (50%), Colombia (19%), Honduras (8%), Nicaragua

(7%), and Venezuela (3%) (see Table 1). Participants' average length of time in the US at baseline interview ranged between 1 and 12 months ($M = 6.74$ months, $SD = 3.11$). Their length of time in the US ranged between 12 and 25 months ($M = 19.95$ months, $SD = 3.19$) at follow-up assessment. Approximately 77% of the sample had immigrated with legal documentation and 23% were undocumented. Twenty-one percent of participants had college degrees, 38% had attended some college, 27% had a high school or equivalent degree, and 14% had not completed high school. Median total annual income prior to immigration to the US was \$1,200. Participants reported a median total annual income of \$12,000 at follow-up assessment.

More women (87%) were retained at follow-up assessment than men [(68.4%), $\chi^2(1, N = 527) = 25.47, p < .001, \eta^2 = .05$]. More retained participants were documented (eg, had legal immigration status) upon arrival to the US (42.5%) in comparison to undocumented participants [(14.3%), $\chi^2(1, N = 527) = 49.86, p < .001, \eta^2 = .10$]. Retained participants also reported higher education levels ($M = 2.70, SD = 1.02$) than non-retained ($M = 2.14, SD = 1.07$) participants [$F(1, 526) = 27.25, p < .001, \eta^2 = .05$]. No differences were observed in pre-immigration income between retained and non-retained participants. Furthermore, no differences were found for pre-immigration regular, binge, or heavy alcohol use between retained and non-retained participants.

Procedures

Inclusion criteria for the study consisted of being a Latino, 18–34 years old, who had recently immigrated (ie, within 1 year prior to the baseline assessment) to the US from a Latin American country with the intention of staying in the US at least 2 years beyond baseline. Respondent-driven sampling (RDS) was the primary recruitment strategy. This technique is an effective strategy in recruiting participants from difficult-to-reach populations.¹⁹ Given that approximately 25% of the US Latino population consists of undocumented immigrants²⁰ and that 23% of the present study sample were undocumented immigrants, RDS was considered to be the most feasible sampling approach. Each participant (*the seed*) was asked to refer three individuals in his/her social network who met eligibility criteria. Seeds were recruited via flyers posted in Miami-Dade neighborhoods with high populations of Latinos, during Latino health fairs in Miami-Dade, and through Latino Community Health Centers. RDS was followed for a maximum of seven legs for each seed.

Interviews were conducted by trained bilingual research staff. All interviews were conducted in Spanish and completed at a confidential safe location agreed upon by both the interviewer and participant.

Measures

Sociodemographic Variables—A demographics form assessed participant gender, age, and country of origin, length of time in the US, education level, documentation status, and pre- and post- immigration total annual income.

Alcohol Use—Alcohol consumption prior to and after immigration was measured retrospectively using the timeline followback interview (TLFB).²¹ This measure is an assessment tool with acceptable reliability and validity for various groups of individuals to recall alcohol drinking behavior up to 12 months prior to the interview.^{21,22} TLFB has been found to provide reliable and valid information on Latino alcohol and drug use, demonstrating high correlations with biological markers and collateral reports.²³ TLFB was used to collect Latino immigrants' recall of alcohol use in the 90 days prior to immigration (ie, baseline assessment conducted during participants' first year in the US) and recall of

alcohol use after immigration, 90 days prior to follow-up assessment (conducted approximately 12 months after baseline interview during participants' second year in the US). Alcohol consumption data were collected using a calendar format to provide temporal cues (eg, holidays, special occurrences) to assist in recall of occasions when alcohol was used. Interviewers were trained to spend more time and use additional cues with participants that had to recall drinking patterns beyond the 12-month period (22% of the participants were interviewed at baseline between month 10 and 12 after arrival to the US).

Data obtained from TLFB were used to measure: (a) number of drinking days during the 90-day pre- and post-immigration time periods, (b) number of binge drinking days during the 90-day pre- and post-immigration time periods, and (c) engagement in heavy alcohol use during the 90-day pre- and post-immigration time periods. Following SAMHSA definitions: binge alcohol use was defined as consuming five or more drinks on the same occasion at least once during the 90-day time period; heavy alcohol use was defined as consuming five or more drinks on the same occasion on 5 or more days during the 90-day time period.⁷

ANALYTIC PLAN

Statistical analyses proceeded in three steps. First, data distributions for *number of drinking days* and *number of binge drinking days* variables were assessed to determine if they violated the assumption of normality. According to Kline,²⁴ continuous variables are not normally distributed enough if they yield absolute skewness and kurtosis values greater than 3.0 and 8.0, respectively. Second, to test for differences between pre- and post-immigration number of drinking days and binge drinking days, we used repeated measures analyses of variance (RMANOVA) for each dependent variable (number of drinking days, number of binge drinking days) with the within-subjects factor of time point and a between-subjects factor of gender (due to substance use differences between Latino/a men and women¹⁸). Third, to determine differences in engagement in heavy drinking, percentages of participants classified as heavy alcohol users at pre- and post-immigration time periods were determined for the overall sample, and stratified by gender. A chi-square test for within-subjects data (McNemar's chi-square test) was used to determine significant changes in heavy alcohol use category membership across time periods within participants. Comparisons between pre- and post-immigration behaviors by gender for number of drinking days and binge drinking days are presented in Table 2 and summarized below.

RESULTS

Preliminary Analyses

Pre- and post-immigration number of drinking days and binge drinking days were positively skewed. Both variables were transformed using a square root data transformation for subsequent analyses.

Differences between Pre- and Post-Immigration Number of Drinking Days

RMANOVA determined that mean number of days drinking differed between pre- and post-immigration time points [$F(1, 403) = 14.03, p < .001, \eta^2 = .03$]. A between-subjects main effect indicated that women reported less drinking days than men [$F(1, 403) = 31.42, p < .001, \eta^2 = .07$]. However, the differences between time points on mean number of drinking days did not differ based on gender, as indicated by the non-significant interaction effect of within-subjects (time point) by between-subjects (gender) [$F(1, 403) = .25, p = .62, \eta^2 < .01$] variables.

Differences between Pre- and Post-Immigration Number of Binge Drinking Days

RMANOVA also revealed that mean number of binge drinking days differed between pre- and post-immigration time points [$F(1, 403) = 12.39, p < .001, \eta^2 = .03$]. A between-subjects main effect indicated that women reported less binge drinking days than men [$F(1, 403) = 51.57, p < .001, \eta^2 = .11$]. Once again, the differences between time points on mean binge number of drinking days did not depend on gender, as indicated by the non-significant interaction effect of within-subjects (time point) by between-subjects (gender) [$F(1, 403) = 1.72, p = .19, \eta^2 < .01$] variables.

Heavy Alcohol Use

Overall rates of heavy alcohol use decreased from pre- to post-immigration. Table 3 provides a summary of differences in the number of participants engaging in pre-versus post-immigration heavy drinking, as well as results of McNemar's chi-square test of these differences. Thirty-nine participants (10%) reported heavy alcohol use only after immigration. More participants ($n = 66, 16\%$) who had engaged in pre-immigration heavy use did not engage in post-immigration heavy use. Engagement in heavy alcohol use remained unchanged for 300 (74%) participants.

Men—Among men, the percentage of pre-immigration heavy alcohol use declined at a marginally significant rate ($p = .08$) after immigration. Twenty-eight men (15%) reported heavy alcohol use only after immigration. However, 44 men (22%) avoided heavy alcohol use after immigration, but had indicated heavy use 90 days prior to immigration. Sixty-three percent ($n = 125$) of men reported no change in behavior.

Women—Among women, the percentage of pre-immigration heavy alcohol use also declined at a marginally significant rate ($p = .08$) after immigration. Approximately 84% ($n = 175$) of women reported no change. Eleven women (5%) reported heavy alcohol use only after immigration. Twenty-two women (11%) did not engage in heavy alcohol use after immigration, but had reported heavy use prior to immigration.

DISCUSSION

These findings indicate that participants (a) drank more often, (b) binge drank more often, and (c) engaged in heavy alcohol use more often during the 90 days before immigrating to the US than during the 90-day post-immigration assessment time period. These findings suggest that future studies on alcohol use behavior and its underlying factors among Latino immigrants should account for alcohol use prior to immigrating to the US to obtain a more extensive trajectory of their drinking history. Perhaps because of stressors involved in immigrating, and psychological and cultural factors once in the US,²⁵ problematic alcohol use was higher among the study participants prior to immigration than post-immigration. Study findings indicate that an extensive history of alcohol use trajectories of recent young Latino immigrants may help health providers develop programs to prevent and treat problematic alcohol use for this population.

To our knowledge, this is the first study that compares Latino immigrant post-immigration alcohol use to pre-immigration use irrespective of country of origin. However, nearly all study participants were Latino immigrants from Cuba, Colombia, Honduras, Nicaragua, and Venezuela, living in Miami, FL, which limits our ability to generalize study results to other Latino sub-populations, primarily persons of Mexican descent. Thus, more research is needed that will document pre-immigration versus post-immigration alcohol use among immigrants of Mexican descent and vulnerable Latino subgroups such as migrant workers, day laborers, and undocumented workers. Future research will determine whether the

findings reported in this study are unique to Latino immigrants residing in Miami-Dade County, or if these findings are indicative of the alcohol use patterns of Latinos in general. Equally important is research that investigates the underlying factors associated with higher frequency rates of alcohol use among Latino immigrants prior to immigration to the US, as well as their decline in use after immigration. Furthermore, this study's findings underscore the importance of in-depth exploration of the applicability of the "healthy immigrant effect" to pre-and post-immigration alcohol use of recent Latino immigrants.^{25,26} The healthy immigrant effect suggests that healthier members of the country of origin may be more likely to immigrate, and that their health declines to match that of many US residents—perhaps because of stressors involved in immigrating and culturally adapting to this country.²⁵

Recommendations for Future Research

Epidemiologic Studies—First, pre-immigration stressors that Latino immigrants experience during the 90 days prior to immigration should be explored more in-depth. It is possible that the decision to immigrate brings about uncertainty and anxiety, effects that may be amplified by the loss of close ties with friends and family, health providers, and religious institutions in one's country of origin,²⁷ which may be related to higher levels of heavy and binge alcohol use reported by participants. These stressors may be further exacerbated among undocumented immigrants, who take on the added risks associated with relocating without proper documentation.²⁸

Second, attention should be given to the psychological factors related to the post-immigration experience of recent Latinos, including the optimistic expectations of many Latino immigrants, derived from beginning a new life in a country with new opportunities.²⁹ The positivity surrounding the start of a new/better life post-immigration may be related to a decrease in health compromising behaviors, such as heavy and binge alcohol use.

Third, factors related to the cultural context of the community in which recent immigrants live shortly after arrival to the US may influence decreases in post-immigration heavy and binge alcohol use. Several studies note that Latinos who immigrate to communities with cultural values that are congruent to their own may face lower stressors when adapting to their new environment.³⁰ These lower levels of stressors may result in better health outcomes, including a reduction of alcohol use among immigrants who live in communities where a majority of their neighbors are Latinos, with even greater effects if the Latino neighbors are from the immigrants' home country. This is the case with the study participants who live in Miami-Dade County, where the majority of residents are of Latino descent and where many neighborhoods/cities (eg, Hialeah, Doral, and Sweetwater) are largely composed respectively of Latinos from Cuba, Venezuela, and Nicaragua.³¹

Stringent societal laws in the US, such as the prohibition of drunk driving and penalties for driving while intoxicated (DWI), may also be associated with a reduction in post-immigration heavy and binge alcohol use. Seeking to establish a new/better life, recent immigrants may become more aware of existing laws and regulations (ie, traffic laws, neighborhood ordinances) than US born Latinos. This awareness to follow laws and regulations of the host country may be due to recent immigrants' investment in moving to the US, and/or interest in not drawing attention to themselves for alcohol use behaviors, especially if they are undocumented immigrants.

Clinical Implications

The findings inform efforts to culturally tailor alcohol use disorder prevention and treatment services in several ways. Such clinical efforts are needed, in part, because of the increasing

numbers of Latino immigrants in the US, in particular, Latino immigrants with alcohol use disorders. First, although there were decreases in binge and heavy drinking behaviors, there were sizable subsamples that continued problematic use at post-immigration. Community-based models of alcohol use disorder treatment need to continue to be developed and adapted to improve access to clinical services and to reach young Latino immigrants in need of intervention.⁸ Second, the early years post-immigration may be an important window of opportunity for Latino community-based clinicians and prevention programs to intervene to help reduce the rates of future binge and heavy alcohol use. Despite commonly cited barriers hindering access to alcohol treatment and prevention services,³² newly arrived Latino immigrant young adults may be receptive to learning about and/or reducing problematic alcohol use and related health risk behaviors.^{33,34} Furthermore, by considering pre-immigration rates of alcohol use and assessing rates after immigration, future clinical research with recent Latino immigrants could determine the underlying social, cultural, and psychological factors associated not only with decreases in problematic use during the initial years in the US, but also with determinants of increased problematic use for some immigrants as they spend more time in the US.¹⁰

Limitations

This study has several limitations. First, as in all studies which include retrospective data of prior alcohol use, there may be recall issues given that some of the study participants were asked about alcohol use 90 days prior to immigration. Additionally, drinking behaviors 90 days prior to immigration may not be indicative of participants' typical alcohol use; atypical alcohol use could have occurred in association with departure from country of origin (eg, response to stress of leaving behind family/friends, and farewell celebrations). Second, although respondent driven sampling has been widely successful in recruiting hidden populations such as undocumented immigrants, it does not secure a representative sample. Given the considerable number of undocumented immigrants within the US Latino population,²⁰ RDS was deemed appropriate. Third, the retention rate of the study was 77%. While this retention rate is above the rate (70%) generally accepted as adequate by social and behavioral scientists,³⁵ the loss of 23% of the sample to attrition may have impacted the results. Fourth, a follow-up assessment of approximately 20 months after immigration may not be a long enough period to establish a pattern of lower heavy and binge alcohol use among participants. Future studies are needed to determine whether, in subsequent years, this pattern of heavy and binge alcohol use could reverse itself and become higher, mirroring the findings of previous research which indicates that the longer Latino immigrants live in the US, the more their patterns of alcohol use become similar to that of US-born Latinos. Fifth, although efforts were undertaken to include participants from major Latino sub-ethnicities, some groups (eg, Mexican American and Dominicans) were not well-represented due to their underrepresentation in the Miami- Dade County area.

CONCLUSIONS

The current study is one of the first to provide information on the alcohol consumption behaviors of recent Latino immigrants prior to and up to 2 years after immigrating to the US. These findings are important for future epidemiologic and intervention studies that investigate the patterns and underlying resiliency and risk factors associated with alcohol use, and for the development of more effective culturally relevant alcohol interventions for Latino immigrants. Accounting for pre-immigration behaviors may provide a wider time window that will allow researchers to more fully determine the applicability of the healthy immigrant effect theory^{25,26} as it relates to the alcohol use of Latino immigrants irrespective of country of origin. This future research will not only build and expand on the theories such as the health immigrant effect, but also be of high public significance because it will inform

those working with Latino immigrants in the provision of alcohol prevention and treatment services.

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TABLE 1

Foreign born Latinos' country of origin

	Study's participants (%)	Miami-Dade Latino population (%)
Cuba	50	52.8
Colombia	19	7
Honduras	7.7	3.3
Venezuela	3.2	2.9
Nicaragua	7.2	6.5
Mexico	1.7	3.2
Central America (other)	4	3.3
South America (other)	6	6.9
Other	1	14.1

TABLE 2
Comparisons between pre- and post-immigration drinking days and binge drinking by gender

	<i>M</i> (<i>SD</i>)		<i>F</i>	<i>df</i>	<i>p</i>	²
	Pre-immigration	Post-immigration				
No. of drinking days						
Women (<i>n</i> = 208)	8.34 (15.37)	5.59 (10.95)				
Men (<i>n</i> = 197)	14.31 (18.48)	10.84 (14.27)				
Total (<i>n</i> = 405)	11.24 (17.20)	8.14 (12.93)	31.42	1, 403	<.001	.03
No. of binge drinking days						
Women (<i>n</i> = 208)	2.95 (7.77)	2.13 (7.08)				
Men (<i>n</i> = 197)	8.58 (13.78)	5.28 (8.98)				
Total (<i>n</i> = 405)	5.69 (11.44)	3.67 (8.20)	51.57	1, 403	<.001	.11

Mean and standard deviation values are based on original data for presentation only. Square root transformations were performed on number of drinking and binge drinking days before statistical analyses.

TABLE 3

Comparison of participants' pre-versus post-immigration heavy alcohol use behavior by gender

<u>Pre-immigration (n = 405)</u>		<u>Post-immigration (n = 405)</u>		McNemar's χ^2 (n = 405)	
n	%	n	%		
Engagement in heavy alcohol use					
Men	77	39.1	61	31	$\chi^2 = 3.13$, df = 1, $p = .08$
Women	33	15.9	22	10.6	$\chi^2 = 3.03$, df = 1, $p = .08$
Total	110	27.2	83	20.5	$\chi^2 = 6.44$, df = 1, $p = .01$