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Cross-Border Policy Effects on Alcohol Outcomes: Drinking Without Thinking on the U.S.-Mexico Border?

Britain A. Mills, PhD,
University of Texas School of Public Health – Dallas

Raul Caetano, MD, PhD, and
University of Texas School of Public Health – Dallas

Patrice Vaeth, PhD
Prevention Research Center

Abstract

Background—Rates of alcohol-related outcomes are sensitive to policy differences in politically distinct, adjacent territories. Factors that shape these cross-border effects, particularly when the policy differences are longstanding, remain poorly understood. We compared the ability of two classes of variables with theoretical relevance to the U.S.-Mexico border context – bar attendance and alcohol-related social-cognitive variables – to explain elevated drinking on the U.S. side of the border relative to other areas of the U.S.

Methods—Data were collected from multi-stage cluster samples of adult Mexican Americans on and off the U.S.-Mexico Border (current drinker N=1351). Structural equation models were used to test drinking context (frequency of bar attendance) and six different social-cognitive variables (including alcohol-related attitudes, norms, motives, and beliefs) as mediators of border effects on a composite drinking index.

Results—The border effect on drinking varied by age (with younger adults showing a stronger effect), consistent with previous findings and known risk factors in the region. Contrary to theoretical expectations, six different social-cognitive variables – despite relating strongly with drinking – were comparable in border and non-border areas (within and across age) and played no role in elevated drinking on the border. Conversely, elevated drinking among border youth was mediated by bar attendance. This mediated moderation effect held after adjusting for potential sociodemographic and neighborhood-level confounders.

Conclusions—Increased drinking among U.S.-Mexico border youth is explained by patterns of bar attendance, but not by more permissive alcohol-related social-cognitive variables in border areas: Border youth attend bars and drink more than their non-border counterparts, *despite* having comparable alcohol-related beliefs, attitudes, norms, and motives for use. Alcohol's heightened availability and visibility on both sides of the border may create opportunities for border youth to drink that otherwise would not be considered.

Correspondence concerning this article should be addressed to Britain A. Mills, University of Texas School of Public Health – Dallas, 6011 Harry Hines Blvd, Dallas, TX, 75390. britain.mills@utsouthwestern.edu..

Keywords

Bars; Social cognitions; Mexican Americans; U.S.-Mexico Border

Open political borders often separate geographic regions with distinct public health policies towards alcohol. Despite the sharp policy differences across these border areas, gradients of drinking and alcohol-related harm are typically blurrier. Populations that border regions with less restrictive policies show elevations in numerous alcohol-related outcomes (Lovenheim and Slemrod, 2010, Asplund et al., 2007, Johansson et al., 2012). Despite its broad public health relevance to border regions throughout the world, our understanding of how these cross-border effects arise remains somewhat limited. On one hand, longitudinal studies of the cross-border impact of policy change support the involvement of accessibility effects. When policy shifts create a proximal, more accessible source of alcohol, corresponding shifts in drinking and related outcomes are seen relatively quickly in adjacent regions, and the effects vary predictably with increasing distance from the border. For example, in Sweden from 1994-2004, proximity to the Danish and German borders (countries with lower alcohol prices during that period) predicted decreased regional alcohol sales, and spirit sales near the Finnish border decreased substantially following a large 2004 tax decrease on spirits in Finland (Asplund et al., 2007). Similarly, before state drinking laws were equalized in the U.S., rates of fatal vehicle accidents were higher near the border of a state with a lower legal drinking age (Lovenheim and Slemrod, 2010). Over time however, extended cross-border policy effects on alcohol outcomes should theoretically take root at other levels as a population adapts to the increased availability of alcohol. For example, at some point sociocultural shifts in perceived drinking norms should follow elevations in drinking. As a result, determining what factors explain alcohol-related disparities in border regions with longstanding policy differences, while no less important a question, may very well be a more complicated one.

Several such factors may contribute to drinking disparities on the U.S. side of the U.S.-Mexico border, a 2,000 mile region of the southern United States separating two countries with longstanding national and local differences in alcohol policy. Due to a lower legal drinking age (18), cheaper alcohol, and marketing tactics of local bars that specifically target youth (Lange et al., 2002), Mexico is an attractive, geographically proximal location where younger U.S. residents can legally drink heavily. Consistent with these risk factors, annual levels of drinking and associated problems are elevated on the U.S. side of the border relative to other U.S. samples, and the effects are most accentuated among younger age groups (Caetano et al., 2012, Caetano et al., 2013b, Vaeth et al., 2012; see also Caetano et al., 2008, Harrison and Kennedy, 1996, Wallisch and Spence, 2006).

The heightened accessibility of alcohol in Mexico clearly contributes to this elevated risk. Among the border region's predominately Mexican American population, U.S. residents who reported any drinking in Mexico in the last year reported more annual drinking and problems than those who did not (Caetano et al., 2013a). However, roughly three quarters of the U.S. drinking border population reported not crossing into Mexico to drink in the last year (Caetano et al., 2013a), and levels of drinking among border youth who did not cross

remain elevated (Mills et al., 2012b). If increased alcohol-related risks among U.S. border residents cannot be fully explained by those who cross into Mexico to drink, what other factors might be contributing to this disparity?

Two factors long considered relevant to risky drinking and associated problems on the *Mexico* side of the border are drinking at bars and the liberal culture of drinking among youth that frequent them (e.g., permissive attitudes and norms toward risky drinking; Lange et al., 2002, Voas et al., 2002). In the present study, we examined whether these factors might explain disparities on the U.S. side of the border more generally. The reasoning is that while policies on the Mexico side of the border create legal and financial incentives that are most attractive to U.S. residents aged 18 to 20 (who cannot legally drink and have less stable sources of income), there are sensible reasons to suspect their impact would not be restricted to recent border crossers or those under 21 years of age. For example, patterns of behaviors (e.g., common drinking locales) and ways of thinking about drinking are unlikely to abruptly shift at an arbitrary age threshold of 21 years. Consequently, behaviors and attitudes molded by experiences in Mexico during formative drinking years may persist into young adulthood (e.g., by attending bars on the U.S. side), leading to elevated risk among border young adults in general, regardless of whether they continue to travel into Mexico. In addition, these effects likely would not be restricted to those who crossed the border. Norms – both actual and perceived – spread through social interaction, and given that youth drinking in Mexico is an intensely social activity, it makes sense that both drinking behavior and ways of thinking about alcohol use would “rub off” to some extent on crossers’ extended peer networks on the U.S. side.

Understanding how these two groups of variables contribute to cross-border elevations in drinking is thus important for theoretical reasons specific to the border context. However, it is also important for practical reasons, as each is a common target of policy initiatives. Pricing, sales, licensing, and zoning restrictions directly target the local accessibility of alcohol in outlets such as bars, while educational and informational campaigns often target individual attitudes, beliefs, and knowledge about the dangers of heavy use. As potential targets of policy decisions in the affected population, disentangling these variables’ impact on elevated risk in a border population is particularly important when the risk cannot be fully explained by cross-border travel.

We examined the extent to which bar attendance and several previously validated measures of social-cognitive variables (including drinking norms, attitudes, expectancies, and motives) could explain differences in drinking near and far from the U.S.-Mexico border (Caetano & Medina Mora, 1990; Fleming et al., 2004; Leigh, 1989; Zemore, 2007). Because previous studies have shown that border proximity effects on drinking and problems are moderated by age (and sometimes, gender; Caetano et al., 2012, Caetano et al., 2013b, Vaeth et al., 2012), we used a general framework for simultaneously testing mediation and moderation hypotheses developed by Fairchild and MacKinnon (2009), a method that subsumes previous approaches (e.g., Baron and Kenny, 1986, Wegener and Fabrigar, 2000). To control for unreliability in individual alcohol consumption indices, we used a latent variable representation of drinking. Finally, because effects of these social-cognitive variables and bar attendance on drinking may be confounded with other social-demographic

and neighborhood characteristics, we also compare models with and without adjustment for these factors.

Method

Sample and Data Collection

The U.S.-Mexico Border is home to over seven million people of predominately Hispanic ethnicity. To examine factors that might explain elevated levels of drinking in this population, we compared Mexican Americans living along the entire U.S.-Mexico border (interviewed between March 2009 and July 2010; N=1,307) with Mexican Americans interviewed in the 2006 Hispanic Americans Baseline Alcohol Survey (HABLAS), a study of over 5,000 Hispanics (N=1,288 Mexican Americans) in non-border areas of the U.S. Interviews for the border sample were conducted in the U.S. counties of California (Imperial County N=365), Arizona (Cochise, Santa Cruz, and Yuma Counties: N=173), New Mexico (Dona Ana County N=65), and Texas (Cameron, El Paso, Hidalgo, and Webb Counties N=704). Interviews for the nonborder sample were conducted primarily in Los Angeles (N=609) and Houston (N=513), and additional interviews were conducted in New York (N=86), Philadelphia (N=59), and Miami (N=21). The present analyses are restricted to current drinkers in the past 12 months (N=1351) who were administered questions covering drinking, bar attendance, and alcohol-related attitudes, norms, expectancies, and motives). Each study sampled the adult population (18 or older) and employed virtually identical multi-stage cluster sampling methodologies and survey instruments. A poststratification weight was applied to correct for nonresponse and adjust the sample to known Hispanic population distributions on demographic variables (education, age, and gender). Trained bilingual interviewers conducted Computer Assisted Personal Interviews at respondents' home lasting about 1 hour, and all respondents received a $25 incentive for participation and provided written informed consent. Response rates for the border and non-border samples were 67% and 76%, respectively. Both surveys were approved by the Committee for the Protection of Human Subjects of the University of Texas Health Science Center at Houston.

Measures

Demographic variables—Male gender and border residence were represented by dichotomous variables in all models. Previous analyses have shown that age trends in drinking in this sample are driven largely by younger age groups, whereas older age groups (30-39, 40-49, and 50+) are generally comparable. To capture this nonlinearity, age was treated as a dichotomous variable contrasting young adults (18-29 years old, coded as 1) with older age groups (30 years or older, coded as 0). This coding provides an intuitive interpretation for the age by border product term representing the key interaction effect of interest: Because it takes a value of 1 for 18-29 year old border residents and 0 for other groups (young non-border, old border, and old non-border), it represents an adjusted contrast of young border residents with all other groups in the regression models. Additional demographic variables controlled for in some models included birthplace (U.S. versus foreign-born); income; education, employment status, and marital status.

Drinking—Five variables covering drinking in the previous 12 months were used as indicators of a latent drinking index: frequency of binge drinking (four/five standard drinks over a two hour period for females/males); volume consumed (using the "graduated frequencies" method; Clark and Hilton, 1991, Greenfield and Kerr, 2008); frequency of heavy drinking (consuming four/five standard drinks in a single *day* for males/females; this measure correlated moderately with binge drinking, r = .35); maximum number of drinks consumed on any single day in the past 12 months; and whether the respondent "stayed intoxicated for several days at a time" during the past 12 months (dichotomous). The first four continuous variables showed substantial positive skew and were log-transformed for all analyses. Factor analyses strongly supported a 1-factor structure (see supplemental material). Correlations between the items ranged from .28 to .87 (average *r* = .50; Cronbach's α = .79).

Social/cognitive mediators—All social/cognitive measures have been validated in previous studies and exhibit one-dimensional structures with acceptable reliability (Mills et al., 2012a, Mills et al., 2012b, Mills and Caetano, 2010, Mills and Caetano, 2012). Although the items comprising the scales are heterogeneous, their unidimensional structure indicates that they have enough in common to ensure that inferences about manifest aggregates (e.g., a mean or sum) will reflect that common variance and will not be contaminated by heterogeneity. Aggregate measures were computed by taking the mean of relevant items. Drinking norms were assessed with items covering levels of drinking considered acceptable in various circumstances (e.g., "with friends at home", "with co-workers out for lunch"; Cronbach's α = .85). Higher scores indicate more favorable norms. Alcohol expectancies were measured with a four-item measure of emotional fluidity (e.g., how often alcohol would make you feel "relaxed" or "romantic"; α = .80) and a five-item measure of emotional/behavioral impairment expectancies (e.g., how often alcohol would make you "argumentative" or "lose self control"; α = .90). Higher scores indicate increased expectations. Alcohol attitudes were measured with eight positive items (e.g., "having a drink is one of the pleasures of life"; α = .76) and four negative items (e.g., "alcohol brings out the worst in people"; α = .59), scored on binary agree-disagree scales. Higher scores indicate more positive and more negative attitudes, respectively. Motives for using alcohol were measured with nine Likert-type items such as "it's a good way to celebrate," and "drinking helps me to forget about my worries and problems" (α = 0.84), with higher scores indicating higher motives to drink.

Frequency of attending (and drinking) at bars—The number of days in the past year on which the respondent went to a bar and drank alcohol was computed from questions covering frequency of attending "bars, clubs, taverns, or cocktail lounges" in the previous 12 months and the likelihood of drinking alcohol on these occasions. Due to skew in the distribution of responses to this variable, values were log-transformed for analyses. Prior to transformation, means and 95% CIs for the four groups of interest were: border 18-29 year olds, $\bar{x}$ = 11.6, [8.1 - 15.2]; non-border 18-29 year olds, $\bar{x}$ = 6.5,[4.2 – 8.7]; border 30+ year olds, $\bar{x}$ = 3.9,[1.9 – 5.9]; and non-border 30+ year olds, $\bar{x}$ = 4.1,[2.4 – 5.7].

Neighborhood characteristics—Each of these measures reflected the mean of several Likert-type items. Perceived social cohesion (e.g., “people are willing to help their neighbors” and “this is a close-knit neighborhood”; $\alpha = 0.72$) and social control (how likely it would be for people in their neighborhood to intervene “if children were skipping school” or “if a fire station was being closed down by the city”; $\alpha = 0.78$) were each measured with five items scored on a five-point scales (adapted from Sampson et al., 1997). Perceived neighborhood violence was assessed with five items on four-point scales concerning the frequency that various violent events occurred in their neighborhood in the past six months (e.g., a violent argument between neighbors, a gang fight, or a robbery/mugging; $\alpha = 0.81$).

Data Analyses

All analyses accounted for the complex sampling procedures used in the border and HABLAS studies.

Mediation models—First, we identified patterns of differences in the latent drinking measure across location (border vs. non-border), gender, and age by modeling these variables and their factorial interaction effects (three two-way interactions and one three-way interaction). Nonsignificant interaction terms were dropped and the model refitted, providing a baseline model that subsequent models built upon. We also fit additional models separating border residents who crossed into Mexico to drink from those who did not. Consistent with past results, a) crossers reported more drinking than non-crossers, but b) both groups reported more drinking than non-border residents and c) moderating influences of age and gender on these two border effects were indistinguishable (see supplemental material). Consequently, reported models in this manuscript use a collapsed border variable indicating whether or not the respondent lived on the border.

Next, we fit a series of structural mediation models predicting latent alcohol involvement. At minimum, models included border residence, gender, age, and any retained interactions from the preliminary models as exogenous variables. Additional models included exogenous neighborhood variables and sociodemographic characteristics in order to estimate effects of interest adjusting for potential confounders. In all analyses, paths from each exogenous variable were modeled (a) to a single intervening variable, and (b) to the latent drinking variable. Separate models were fitted, treating the six social-cognitive variables (norms, motives, emotional fluidity expectancies, behavioral impairment expectancies, positive attitudes, and negative attitudes), and frequency of bar attendance as the intervening variable. All social-cognitive variables were mean-centered to facilitate interpretation of model coefficients.

Models were analyzed following Fairchild and MacKinnon's general framework for testing moderated mediation and mediated moderation effects (2009); see supplemental material for a more detailed overview of this approach). Indirect (mediated) effects were directly quantified in a path decomposition of model estimates using bootstrapped standard errors and bias-corrected confidence intervals (MacKinnon et al., 2002; 2004).

Results

In the initial model predicting latent alcohol involvement from border residence, age, gender, and all two and three-way interactions, the three way interaction was not significant (b = -.05, SE = .39, p = .90). After dropping this term, the only two-way interaction to reach significance was the border by young adult interaction, i.e., "border youth" effect (b = .40, SE = .18, $p < .05$). Consequently, only this interaction was retained for subsequent analyses. Preliminary mediation models for both social cognitive and bar attendance models showed no evidence that these pathways varied by age or border residence. Consequently, the analyses discussed below are restricted to "mediated moderation" models that estimate the extent to which high levels of drinking among border youth can be explained by social cognitive and bar attendance variables.

Social-cognitive models

Model estimates using various social-cognitive variables as the mediator are shown in Table 1. Contrary to theoretical expectations, there was no evidence that any social-cognitive variable contributed to the high levels of drinking among border youth. For example, although virtually all social-cognitive variables related significantly and in theoretically sensible ways with the latent drinking variable (as shown in the "mediator" row of Table 1), the border by age interaction never significantly predicted a social-cognitive mediator. Border youth were surprisingly comparable to other groups on all six social-cognitive variables examined (the "border youth" effect in the upper portion of Table 1), and they continued to differ in drinking even after adjusting for effects of these mediators on the outcome. The path decomposition of Table 1 recapitulates this pattern, showing that the overall mediated effect was nonsignificant for all social-cognitive mediator variables. As a final check on these results, we estimated a final model using all six social-cognitive variables as mediators; that is, we estimated six distinct indirect pathways simultaneously. In this model, the total indirect effect – representing the net mediating influence of all six social-cognitive variables – remained insignificant ($b_{indirect}$ = .62, SE = .39, $p = .11$).

Bar attendance models

Table 2 contains parameter estimates from models using the bar attendance variable as a mediator. The column labeled "No Additional Adjustment" contains estimates from a model analogous to those presented in Table 1. Here, border youth attended bars more frequently than other groups (the Border Youth effect in the upper portion of Table 2), which in turn predicted increased drinking (the "Frequency of bar attendance" row of Table 2). This pattern was seen again in the path decomposition of these estimates, which shows that bar attendance significantly mediated the effect of border youth on drinking.

In the next set of analyses, we re-estimated the bar attendance models, controlling for potential confounders of these effects. Given known links between the density of alcohol outlets and neighborhood characteristics (Berke et al., 2010, Nielsen et al., 2010, Pollack et al., 2005, Romley et al., 2007), we first controlled for three neighborhood variables – respondents' perceived level of social control, social cohesion, and violence in their neighborhood – on both the mediator and the latent drinking outcome. In this model, only

one of these added effects was significant: Perceived neighborhood violence predicted increased drinking (b = .18, SE = .09, $p < .05$). Most importantly, adjustment for these neighborhood effects had no substantive impact on the pattern of effects observed in the unadjusted model (Table 2, "+ Neighborhood Adjustment") or on the estimates of mediation from the path decomposition. In a final model, we additionally controlled for the effects of several social demographic background characteristics (whether the respondent was born in the U.S., income, education, employment status, and marital status) on both the mediator and the latent drinking outcome (see supplemental material for a description of these effects). Once again, there were no substantive changes in the direction of effects, their magnitude, or in the pattern of significance (Table 2, "+ Social-Demographic Adjustment") for the raw model estimates or those from the path decomposition.

Discussion

Among current drinking Mexican Americans, the effect of border residence on alcohol use is best described by a border by age interaction: Living on the border is linked to elevated levels of alcohol use, and the effect is stronger for younger age groups. This finding is consistent with recent analyses from the general population of Mexican Americans on the border (Caetano et al., 2012).

Our findings concerning the theoretical pathways that explain these effects were surprising. Variables concerning attendance of on-site alcohol outlets where alcohol is a focal commodity (e.g., bars) and social-cognitive factors (including norms, positive and negative attitudes, motives, and two types of alcohol expectancies) each related to alcohol use in theoretically sensible ways, but only bar attendance explained the specific patterns of alcohol use on and off the border. Despite clear differences in alcohol use, border and non-border young adults were indistinguishable in their perceived alcohol norms, motives for using alcohol, expectations of emotional fluidity and behavioral impairment following alcohol use, and positive and negative attitudes towards alcohol.

In contrast, age differences in drinking on and off the border were precisely mirrored in patterns of bar attendance: Young border residents drank at bars more frequently than young non-border residents and older residents on and off the border. Path decompositions confirmed that social-cognitive variables played no mediational role in the border by age interaction effect on drinking, whereas this effect was mediated by bar attendance. Finally, these patterns held even after controlling for multiple potential confounders of these effects, including perceived neighborhood factors and individual social-demographic characteristics. It is important to note that the lack of a mediating role for the social-cognitive variables does not reflect unreliable or invalid social-cognitive measures. As discussed in the methods section, the reliability of these measures has been established across several previous studies. Regarding validity, all but one of the measures (behavioral impairment expectancies) showed relatively strong and theoretically sensible (adjusted) relations with the latent drinking variable.

Our findings should be considered in light of several limitations. First, although the border sample was representative of the entire U.S.-Mexico border region, the HABLAS sample

was representative only of the metropolitan areas where those respondents were interviewed. While the pattern of disparities in our full sample generally mirrors the theme of previous research (namely, that U.S.-Mexico border residence confers higher alcohol-related risks), it is not necessarily the case that our findings would generalize to Mexicans in general. Second, our results do not directly speak to outcomes we did not assess or to the possible contribution of other social-cognitive factors. For example, the present analyses only speak to gradations of drinking (rather than to the probability of drinking, although current findings indicate the pattern is the same for that outcome; Mills et al., 2012b). Similarly, although attitudes, norms, expectancies, and motives *regarding drinking* largely cover the gamut of social-cognitive antecedents of drinking that have received significant amounts of attention in alcohol research terms, we did not measure cognitive antecedents of the key mediating factor, bar attendance. For example, border youth may have more favorable attitudes towards bar attendance than other groups, which may contribute to their higher levels of drinking and thus represent a sensible target of prevention efforts. However, as the purpose of attending bars is generally to drink (especially among younger age groups), the possibility that border youth attitudes (or motives, etc.) concerning bar attendance would differ substantively from those concerning drinking strikes us as unlikely.

In conclusion, heavy drinking in the border region is influenced by the large number of crossings by younger adults to the Mexico side in the evening hours, where alcohol is purchased at lower prices well into the morning at the many bars in these areas (Lange et al., 2002). Given that this heightened accessibility to the U.S. border population has been present for some time, it seems sensible that their higher drinking would be at least partially reflected in more liberal social-cognitive antecedents of drinking, including alcohol attitudes, beliefs, norms towards heavy use and intoxication, and motives for drinking. Although these social-cognitive variables were clearly related to drinking in the present study (as indicated by their significant impact on drinking shown in Table 1), they had little to do with disparities in drinking between border and non-border regions. Yet counter-intuitively, border residents nevertheless attended bars more frequently and consumed more alcohol than their non-border counterparts.

This pattern of effects suggests that border disparities in drinking may reflect a process where alcohol's heightened availability and visibility on both sides of the U.S.-Mexico border create opportunities to drink that are acted upon without overt deliberation (at least with regard to these major social-cognitive antecedents of drinking). These findings have important implications for public health policy in the region. First, informational campaigns targeting overt cognitions about *alcohol use* (e.g., beliefs about the dangers of heavy drinking) are likely to have little impact on the disparity in drinking between border and non-border areas of the U.S. In contrast, environmental controls on the affordability and availability of alcohol represent an alternative approach that may be more effective in preventing alcohol-related harms (Babor et al., 2010). For example, following a change in closing time of bars in Juárez, Mexico from 5 am to 2 am in January of 1999, the number of individuals returning to the U.S. side with positive BACs after 3 am (many of whom would return to drive a car on the U.S. side) was reduced by 89% (Voas et al., 2002). By directly limiting opportunities to engage in risky patterns of drinking, these types of alcohol control

measures may represent a more effective way to reduce drinking disparities observed in the border region of the U.S. Second, the broad applicability of the results to the U.S. border population in general suggests that attention need not be restricted to drinking contexts within Mexico or to individuals who cross the border to drink. Efforts to better understand common drinking contexts on the U.S. side, including mapping the distribution of alcohol outlets such as bars in the region, are clearly needed.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Parameter estimates from mediational models predicting the severity of (latent) alcohol involvement, with social-cognitive variables as mediators.

	Mediational Models Using One of Six Social-Cognitive Mediators					
	Norms	**Motives**	**Emotional Fluidity Expectancies**	**Impairment Expectancies**	**Positive Attitudes**	**Negative Attitudes**
Effects on the Mediator						
Male gender	.13 (.03)‡	.23 (.05)‡	.16 (.07)*	.03 (.08)	.14 (.02)‡	.01 (.03)
Border Residence	−.01 (.04)	−.06 (.07)	−.21 (.10)*	−.12 (.11)	−.09 (.03)†	.01 (.03)
Young Age (18-29)	.09 (.04)*	.01 (.06)	−.17 (.10)	−.28 (.09)†	−.01 (.03)	−.05 (.03)
Border Youth (Border × 18-29)	.06 (.06)	.13 (.09)	.21 (.14)	.12 (.13)	.05 (.04)	−.04 (.05)
Effects on Drinking Severity						
Male gender	.89 (.09)‡	.85 (.10)‡	.90 (.09)‡	.92 (.09)‡	.79 (.09)‡	.93 (.09)‡
Border Residence	.15 (.11)	.19 (.11)	.19 (.11)	.12 (.10)	.24 (.11)*	.12 (.11)
Young Age (18-29)	−.01 (.12)	.10 (.11)	.16 (.12)	.11 (.11)	.12 (.11)	.08 (.12)
Border Youth (Border × 18-29)	.41 (.18)*	.36 (.18)*	.36 (.17)*	.41 (.17)*	.38 (.17)*	.40 (.18)*
Mediator	1.46 (.13)‡	.95 (.09)‡	.33 (.05)‡	.04 (.05)	1.28 (.16)‡	−.49 (.13)‡

Path Decomposition	**b**	**95% CI**	**b**	**95% CI**	**b**	**95% CI**	**b**	**95% CI**	**b**	**95% CI**	**b**	**95% CI**
Border Youth → Mediator → Drinking	.08	*[−.11,.26]*	.12	*[−.06,.28]*	.07	*[−.01, .17]*	.01	*[.00,.03]*	.06	*[−.03,.15]*	.02	*[−.02,.08]*
Border Youth → Drinking	.41*	*[.05,.77]*	.36*	*[.03,.76]*	.36*	*[.02,.71]*	.41*	*[.09,.74]*	.38*	*[.06,.75]*	.40*	*[.09,.77]*
Total	.49*	*[.12,.91]*	.48*	*[.12,.89]*	.43*	*[.10,.79]*	.41*	*[.10,.76]*	.44*	*[.10,.81]*	.42*	*[.10,.76]*

Note. Estimates in the upper portion of the table are linear regression coefficients. Path decomposition estimates represent the unique effect of border youth on severity of drinking via the listed path (standard errors are bootstrapped and confidence intervals are bias-corrected). Columns correspond to distinct mediational models, using the column label as the mediator. Effects of the mediator on the latent drinking variable are provided in cells corresponding to the "mediator" row (under "Effects on Severity of Alcohol Involvement"). For example, for each unit increase in the drinking motives measure, the latent drinking variable increased by .95 units. Note also that because their interaction is modeled, the "Border Residence" component term represents the simple effect of border residence among older residents; likewise, the "Young Age" term represents the simple effect of young age among non-border residents.

*$p<.05$

†$p<.01$

‡$p<.001$.

Table 2

Parameter estimates from mediational models predicting the severity of (latent) alcohol involvement, with bar attendance variables as mediators.

	No Additional Adjustment	+ Neighborhood Adjustment	+ Social-Demographic Adjustment
Effects on Frequency of Bar Attendance			
Male gender	.21 (.09)*	.20 (.09)*	.25 (.08)†
Border residence	−.04 (.12)	.01 (.11)	.05 (.11)
Young Age (18-29)	.34 (.11)†	.33 (.11)†	.10 (.11)
Border Youth (Border × 18-29)	.57 (.20)†	.56 (.20)†	.58 (.18)†
Effects on Drinking Severity			
Male gender	.94 (.09)‡	.93 (.10)‡	.95 (.10)‡
Border residence	.15 (.11)	.20 (.11)	.23 (.13)
Young Age (18-29)	−.03 (.11)	−.05 (.11)	−.08 (.11)
Border Youth (Border × 18-29)	.24 (.17)	.27 (.17)	.16 (.18)
Frequency of bar attendance	.40 (.04)‡	.40 (.04)‡	.40 (.04)‡

Path Decomposition	**b (SE)**	**95% CI**	**b (SE)**	**95% CI**	**b (SE)**	**95% CI**
Border Youth → Freq. bar attendance → Drinking	.23†	*[.05,.39]*	.22†	*[.06,.38]*	.23†	*[.09,.39]*
Border Youth → Drinking	.24	*[−.08,.58]*	.27	*[−.04,.62]*	.16	*[−.18,.50]*
Total	.46*	*[.11,.85]*	.50†	*[.16,.89]*	.39*	*[.02,.79]*

Note. Estimates in the upper portion of the table are linear regression coefficients. Path decomposition estimates represent the unique effect of border youth on severity of drinking via the listed path (standard errors are bootstrapped and confidence intervals are bias-corrected). Columns correspond to distinct mediation models with no additional adjustment, adjustment for effects of neighborhood factors ("+ Neighborhood Adjustment"), and adjustment for both neighborhood factors and various sociodemographic background characteristics ("+ Social-Demographic Adjustment") on both frequency of bar attendance and severity of alcohol involvement.

*p<.05

†p<.01

‡p<.001.