The Mexican migration to the US and substance use in Northern Mexico

Guilherme Borges, ScD, **Maria-Elena Medina-Mora, PhD**, **Ricardo Orozco, M.Sc.**, **Clara Fleiz, M.Sc.**, **Cheryl Cherpitel, Dr.PH**, and **Joshua Breslau, PhD ScD**

Abstract

Aims—To examine the impact of migration to the US on substance use and substance use disorders in three urban areas of Northern Mexico.

Design—Cross-sectional survey of immigration related experiences and lifetime and past-year alcohol and drug use, in a representative sample of respondents ages 12 to 65.

Setting—Interviews were conducted in the cities of Tijuana, Ciudad Juarez, and Monterrey during 2005. Respondents were classified into three groups: 1) "return migrants", 2) "relatives of migrants" and 3) "others in the general population".

Findings—A total of 1,630 completed interviews were obtained for a response rate of 70.5%. "Return migrants" were more likely to have used alcohol, marijuana or cocaine at least once in their lifetime and in the last 12-months, more likely to develop a substance use disorder, and more likely to have a 12-month substance use disorder, compared with "others in the general population". Among "return migrants", longer length of time in the US and type of work performed as an immigrant were related to higher prevalence of substance use. Among "relatives of migrants", migration experiences were not associated with increased prevalence of substance use compared with "others in the general population".

Conclusion—This study found a link between migration to the US and the transformation of substance use norms and pathology in Mexico. Future research of pre-migration involvement in substance use and data on the timing of events among return migrants is needed. Public health measures are likely to require cross-border coordination of research and service development.

Keywords

migration; alcohol; drug use; Mexico; Hispanic

Introduction

The prevalence of alcohol and drug use and of disorders of abuse and dependence associated with substance use is much lower in Mexico than in the United States (1,2). However, evidence from a number of sources suggests that this gap may be closing, driven in part by the transmission of cultural norms across transnational migration networks (3). The prevalence of drug use has a clear geographical distribution within Mexico, with much higher levels found in the northern regions, closer to the Mexico-US border, compared with other parts of the country (4). The little data available suggest higher rates of heavy alcohol and alcohol- related problems on the Mexico-US border than in the interior of both countries (5,6). Among

Address comments to Guilherme Borges: Instituto Nacional de Psiquiatria, Calzada Mexico Xochimilco No 101- Col. San Lorenzo Huipulco, Mexico D.F. C.P.14370, Mexico tel: (52 55) 5655-3031; fax (52 55) 5513-3446, guibor@imp.edu.mx / guilhermelgborges@yahoo.com.

Mexican-Americans in the US, longer duration of residence in the US and US-birth are associated with higher prevalence of substance use and substance use disorders (7-10).

A better understanding of the pathways through which migration to the US may affect substance use disorders in Mexico is needed to inform public health efforts to reduce their impact. A recent study by our group examined a Mexican national sample for evidence of the direct impact of migration on substance use among people who had migrated to work in the US and then returned to live in Mexico, and the indirect impact of migration on people without a personal history of migration who had a migrant in their immediate family. In that study, both return migrants and relatives of migrants were more likely to have used alcohol, marijuana, cocaine, and other illicit drugs at least once in their lives, and more likely to have met criteria for lifetime and last year substance abuse than were other Mexicans (11). That research was the first epidemiological study to report such findings, although prior reports from clinical samples of Mexican addicts under treatment (12), as well as isolated anthropological reports (13) and local descriptive surveys of rural communities with migrant flows (14) have also mentioned this phenomena. These findings suggest that transnational networks that connect migrants with their families in Mexico may be primary vectors for change in substance use and substance use disorders in the Mexican population. Introduction of new patterns of other behaviours such as risky sexual practices among return migrants and their relationship with the HIV-AIDS epidemic has been reported previously in Mexico (15-16), as have reports on changes in dietary habits among Mexican migrants and their families (17-18), among other health-related behaviours that may be influenced by migratory movements (19).

This study investigates the association between migration to the US, substance use and substance use disorders in three urban areas of Northern Mexico. The Northern region is of particular interest in Mexico because of its proximity to the US and previous evidence that alcohol and drug use is about twice as common in this region compared with other regions. Data come from the Local Surveys on Addictions 2005 (Encuestas Locales de Adicciones 2005) (20) conducted in three US-Mexico border cities. These surveys include more detailed information regarding the experience of migration than was available in previous studies. In addition to the original distinction of the three groups described above, this survey includes data on the length of time in the US, the type of work performed as an immigrant and the experience of stress among return immigrants. For the relatives of migrants, the number of relatives living in the US and the amount of communication with these members are also included. These analyses are important for providing much needed information on health policies for the Mexicans migrants and their families, both in the US and in Mexico.

Methods

Sample

The Local Surveys on Addictions 2005 is part of the Mexican National Survey on Addictions (ENA) series, supported by the Ministry of Health (CONADIC- National Council Against the Addictions), state and local governments, and the National Institute of Psychiatry (INP), and included the cities of Tijuana (Baja California), Ciudad Juarez (Chihuahua), and Monterrey (Nuevo Leon). A common methodology was used, in which 50 primary sampling units (PSUs) were selected with probability proportional to a measure of size in each location, based on data from the National Institute of Geography and Informatics 2000 census count (similar to US census tracts). Two city blocks were selected in each PSU as second stage units and each housing unit was listed within each block. A selected segment of these were drawn as the third stage sampling unit, and all eligible respondents within the selected housing unit were listed and a systematic sampling scheme applied to produce a self-weighting sample of respondents. All residents 12 to 65 years old were listed in order of age and selected according to the "last birthday" technique in which the respondent who had the closest birthday to the interview day

was selected. Four days of interviewer training were provided by INP staff, who also followed supplementary field supervision and data control protocols. Data were collected in November 2005 on a total of 1,630 respondents, representing a 70.5% response rate. The data reported here is based on a sample representative of large urban areas of three states in Northern Mexico, that shared border areas with the States of California, New Mexico and Texas in the US, but cannot be assumed to be representative of all Northern Mexico, specially their rural areas.

Measures

The survey questionnaire, lasting an average of 49 minutes, included items related to alcohol use/dependence and related problems, drug use/dependence, immigration experiences, and demographic characteristics, including the city in which the respondent was living at the time of the interview, since large differences have been found in migration and substances use related to geographic locality in Mexico.

Alcohol and drug use—Lifetime and last 12-month alcohol and illicit drug use (marijuana, crack-cocaine, other drugs) was assessed with a series of questions validated in local and national surveys in Mexico dating since the 1970's (21). Heavy drinking (last 12-months) was defined as at least weekly use of alcohol with 5 or more drinks on an occasion at least weekly. Alcohol and drug dependence were assessed with a scale that included items adapted from the Alcohol Section of the Composite International Diagnostic Interviews (CIDI) core (22) which operationalized Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (23) criteria for alcohol (last 12 months) and drug dependence (lifetime and last 12 months) (24-25). Following the DSM-IV criterion for establishing alcohol dependence, at least one positive item is needed in each of at least three of the seven domains that constitute the dependence criteria.

Migration experience—"Return migrants" were categorized as those who had themselves stayed in the US for at least one month and gave 'work' as their reason for visiting the US. "Relatives of migrants" included those who had members of their immediate family currently in the US, and had never, themselves, been in the US for work. A third category of 'others' included those not in either of the two prior migration groups. Those who ever immigrated to the US and relatives of migrants were both asked parallel questions regarding how long they stayed in the US (or have been in the US for relatives), and the type of work performed in the US. If a respondent had more than one relative in the US, type of work and length of time for the relative with the longer stay was used. Return migrants with at least one year in the US, were also asked a series of five questions related to experiences of stress and discrimination that included difficulties in interacting because of English skills (three questions), difficulties in finding work because of being Mexican, and feeling rejected because of Mexican origin. These questions were rated on a five point Likert scale (where 0 indicated "not worried/stressed" while 4 indicated "very worried/stressed"). The five items were summed and categorized as: no stress (0 points), medium (1-8) and high stress (9+).For the relatives of immigrants, additional information was elicited on the number of relatives currently in the US and how often these migrants communicated with their family.

Analyses

The data were weighted to adjust for differential probabilities of selection and non-response, and post-stratified to represent the three cities according to the 2000 census. The 12-month and lifetime prevalence of substance use and substance use disorders was calculated as the proportion of the entire sample reporting each outcome. Proportions were compared with design-adjusted chi-square tests using SUDAAN software (26). Crude and adjusted odds ratios (ORs) were estimated in logistic and polytomous logistic regression models (27) also using SUDAAN software to adjust for design effects. Tests for migration variables and statistical significance were evaluated using two-sided design-based tests at the 0.05 level of significance.

Results

Table 1 presents the demographic characteristics of the three groups defined by migrant status. All demographics variables differed across the samples. Compared to the group with no migrant experience, return migrants were more likely to be male, older, less educated married, to live in Tijuana or Ciudad Juarez and to have worked in the prior 30 days. Relatives of migrants were more similar to people from families without migrants, but they were still more likely to be female, older and married when compared to the later group.

The lifetime prevalence of alcohol, marijuana, cocaine and other drug use was higher among migrants and relatives of migrants compared with other Mexicans (Table 2A). The lifetime prevalence of any drug use and of using multiple drugs was also higher for both the return migrants and relatives of migrants, but more so in the former group. The lifetime prevalence of drug dependence was elevated among return migrants but not among relatives of migrants. The crude OR estimates from Table 2A are positive and most are statistically significant.

Current year alcohol use, heavy drinking and drug use, alcohol dependence, drug dependence and any substance dependence (alcohol or drug) were all elevated among return migrants compared to other Mexicans. There was a tendency for positive ORs among relatives of migrants for these variables, but none reached statistical significance (Table 2B).

Table 3A shows the association of alcohol and drug use and disorders with migration experiences, adjusted for age, sex, marital status, education and city of residence. Sample size precluded analyses for the full set of variables in Table 2A and 2B, and only summary variables and those with larger prevalence are included. Controlling for sociodemographic variables reduced the strength but did not eliminated associations between return migrants and alcohol and drug use and disorders, as shown at the top of Table 3A. Dose- response relationships between time in the US and substance use was apparent for most variables (except for ever used alcohol), with migrants spending more than one year in the US showing increased ORs. Return migrants who performed work in the services and in farming/building had a tendency to shown larger ORs and those with medium and high levels of stress were generally more likely to report substance use. For the relatives of migrants (Table 3B), controlling for sociodemographic variables eliminated the associations described previously in Table 2A and 2B. With very few exceptions, no associations were found between time living in the US and type of work performed by the migrant and substance use on the part of the migrant's relative, nor were associations apparent between substance use and the number of migrant members in the US or the amount of communication with migrants.

Discussion

This study is the first to examine migration to the US as a risk factor for alcohol and drug use in the Northern urban areas of Mexico. These areas close to the US border are known to have the highest levels of use of alcohol and drugs in Mexico. For instance, in the 1998 Mexican National Survey on Addictions (Encuesta Nacional de Adicciones: ENA) 11% of the population of areas along the US border reported heavy drinking (5 or more drinks at least once in the past month), twice as many as in other areas of Mexico (5). In that survey Tijuana and Ciudad Juarez had the highest lifetime prevalence of illegal drug use in Mexico, over twice the national average (28). Other studies have also found that the border areas have the highest rates and the fastest rates of increase in drug use in Mexico (4,29,30). We found that individuals in this region who have personal experience as migrant workers in the US were more likely to use substances than others, as we found in our previous study that examined this association on a nationwide basis (11). The finding that both initiation of substance use (alcohol and drugs) and recent substance use (heavy use of alcohol and drug use) are more common among those

with experience as migrants suggests that migration may contribute to substance use and that these acquired substance use patterns continue to some degree after they return to Mexico.

The association between migration and substance use in this regional study differed from the pattern observed nationally with respect to differences between relatives of migrants and other non-migrants (those who have neither been migrant workers in the US nor have relatives working in the US), in the Mexican population. In the previous nationwide study relatives of migrants were more likely to use substances and to have substance use disorders than other non-migrants. This finding should be interpreted in light of the much higher prevalence of substance use among members of both groups in this region compared with the prevalence of substance use nationally. The prevalence of use of marijuana, cocaine and other drugs among people with no migration experience and no family member in the US was about twice as high in these urban border regions as in the nationwide study: 5.8%, 2.6% and 1.7% vs. 10.1%, 4.3%, and 3.4% respectively. This pattern of findings is consistent with strong regional influences on substance use that pervade the population of this region as a whole regardless of familial network connections to the US.

This study is also the first to examine particular aspects of migration experience that have been suggested as explanations for the association between migration and substance use. Among return migrants, substance use was more common among those who stayed in the US for longer periods of time, felt discriminated against while in the US, and worked at jobs in the services and agricultural sectors. Among relatives of migrants, however, none of these migration experience factors were related to substance use. These findings suggest that a useful strategy for preventing increases in substance use among Mexican migrants in the US may be to focus on living and working conditions among those working in these particular employment sectors. Studies of Mexican-origin migrants in the US could be conducted to examine the context of substance use among these workers in greater detail. The benefits of reducing initiation of substance use among Mexican migrants working in the US are likely to accrue on both sides of the border.

The finding that longer periods of residence in the US are associated with increased substance use is consistent with studies of Mexican immigrants that have been conducted in the US. Among Mexican immigrants interviewed in the US, longer periods of residence are also associated with higher levels of substance use (7-9,31), particularly in the agricultural sector (32-34). It is likely that the increase in substance use among migrants is not attributable to a single factor, but rather arises from a combination of increased opportunity to use substances, emersion in a cultural setting in which substance use is condoned or encouraged, and isolation from the family and community imposed constraints on behaviour while in the US. The potential for interventions addressing these factors to reduce substance use among migrants should be examined.

The relationship between discrimination stress and increase in substance use among return migrants in this survey is also consistent with prior work among Latinos and Mexican-Americas in the US (9,35,36). This relationship may be due to the use of alcohol and drugs in an effort to relieve psychological distress or to the fact that Hispanics, in general, have a lower SES which has been associated in Mexico with a greater likelihood of heavy drinking, alcohol abuse and dependence (37) and substance use (4). Research on the effects of ethnic discrimination and health is limited (38) and the mechanism by which return migrants with feelings related to discrimination are more likely to use substances and continue to show higher levels of substance use and substance use disorder is speculative.

Our results may be influenced by selection bias if migrants are more likely to use substances than the general population prior to migration to the US or if migrants to the US who use

substances are more likely to return to Mexico than migrants who do not use substances (39). Testing either of these hypotheses directly requires data on representative samples of migrants on both sides of the border, and information on the timing of substance use relative to migration. A study on alcohol use disorders among Mexicans and Mexican-Americans reported limited evidence contrary to the first bias (40), and studies of related psychiatric outcomes are mixed. A study of suicidality by our group found no evidence of an association between migration and suicidality prior to migration (i.e. comparing migrants with the Mexican general population) or between suicidality and return migration (i.e. comparing return migrants with migrants remaining in the US) (41). A smaller study that included only English-speaking Mexican-born migrants in the US found higher pre-migration prevalence of mood and anxiety disorder among migrants relative to the general Mexican population (42). Sociological studies have found that compared with the general Mexican population migrants are more likely to be married (43), a status strongly associated with low levels of use of substances. Thus, there is no evidence to suggest that selective migration or selective return migration might account for our results, but these alternative explanations cannot be entirely ruled out without further studies.

Limitations

This study has important limitations that should be considered when interpreting the reported findings. First, this study is cross-sectional, cannot imply casual relationships and contains limited information on the relative timing of events. We do not have specific information on the age of migration, age of return migration or age at initiation of substance use that would allow a more definitive statement of causal pathways. Future studies should include information on the timing of these key events. Information on the timing of return migration would be particularly helpful in identifying the long term consequences of migration among those migrants who return to Mexico.

We also lack information on the number of times the individual migrated to the US and then returned to Mexico. Substance use and stress might vary by how many times an individual migrated to the US and then returned, and should be investigated in future research. Finally, this survey relied on retrospective reports of immigration, substance use and dependence. Although prospectively collected data would be preferable, there is no reason to believe that errors in recall of substance use are related to migration experience in a way that would account for findings reported here.

Conclusion

This study supports previous findings showing that the risk for alcohol and drug use and substance use disorders in Mexico is associated to the migration experience of Mexicans workers to the US, and may be particularly related to certain types of work, the length of stay in the US, and experiences of discrimination and associated stress. Public health measures to help cope with these factors are important and should be implemented on both sides of the Mexico-US border. This effort is likely to require cross-border coordination of research and service development. Future research is needed which is related to sequencing with precision the ordering of events (migration and substance use) or, minimally, to obtaining data on substance use in varying time frames (before, during and after migration) and to identify the qualitative aspects of migrant experience that could be linked to increased substance use.

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Table 1

Distribution of the sample by demographic characteristics and immigration status. Mexico, three cities survey, 2005

	No migrant exp. (n=1,258)		Returning migrant (n=100)		Migrant relative (n=272)		X2(df)	p
	n	% (S.E.)	n	% (S.E.)	n	% (S.E.)		
Sex							46.4 (2)	<0.001
Male	521	48.60 (2.09)	73	79.95 (3.95)	97	45.27 (3.54)		
Female	737	51.40 (2.09)	27	20.05 (3.95)	175	54.73 (3.54)		
Age							130.7 (4)	<0.001
12-25	501	46.56 (1.86)	10	10.60 (3.01)	46	18.24 (2.12)		
26-34	265	23.03 (1.47)	17	25.32 (4.86)	68	31.69 (3.26)		
35+	492	30.41 (1.65)	73	64.08 (4.20)	158	50.07 (3.35)		
Education							53.9 (6)	<0.001
None/Elementary school	363	27.05 (1.25)	55	52.21 (4.18)	98	33.64 (2.57)		
Junior High	486	39.89 (1.19)	32	34.45 (4.60)	97	37.95 (3.13)		
High School	229	19.25 (1.10)	11	10.74 (3.60)	46	17.02 (2.86)		
University +	180	13.81 (1.36)	2	2.60 (1.78)	31	11.39 (2.38)		
Marital status							130.3 (4)	<0.001
Single	482	45.18 (1.51)	15	15.08 (4.52)	51	19.76 (2.55)		
Married / Living with someone	648	47.65 (1.27)	63	72.13 (3.89)	189	73.58 (2.94)		
Widowed/Divorced/Separated	128	7.17 (0.66)	22	12.79 (3.44)	32	6.67 (1.38)		
City							35.1 (4)	<0.001
Tijuana	375	29.63 (1.58)	39	43.35 (5.43)	92	33.41 (3.08)		
Ciudad Juárez	368	29.61 (1.19)	37	30.50 (4.10)	109	41.81 (3.27)		
Monterrey	515	40.76 (1.40)	24	26.15 (4.71)	71	24.77 (2.51)		
Worked in the last 12m							22.1 (2)	<0.001
Yes	620	50.15 (1.87)	73	76.01 (5.11)	139	57.30 (3.37)		
No	638	49.85 (1.87)	27	23.99 (5.11)	133	42.70 (3.37)		

n's are unweighted. Percentage are weighted

Table 2A

Lifetime prevalence of alcohol and drug use and immigration status. Mexico, three cities survey, 2005

| | No migrant exp. (n=1,258) | | | | Returning migrant (n=100) | | | | Migrant relative (n=272) | | | |
	n	% (S.E.)	OR1	95% CI	n	% (S.E.)	OR1	95% CI	n	% (S.E.)	OR1	95% CI
Use												
Alcohol												
No	329	26.81 (2.19)	1.00	--	8	5.82 (1.95)			51	17.89 (3.00)		
Yes	929	73.19 (2.19)			92	94.18 (1.95)	5.93	(2.84-12.38)	221	82.11 (3.00)	1.68	(1.07-2.63)
Drugs												
Marihuana												
No	1142	89.89 (1.30)	1.00	--	62	63.45 (5.45)			238	85.55 (2.09)		
Yes	116	10.11 (1.30)			38	36.55 (5.45)	5.12	(3.32-7.90)	34	14.45 (2.09)	1.50	(0.96-2.35)
Crack / Cocaine												
No	1201	95.67 (0.82)	1.00	--	77	78.04 (4.07)			255	94.23 (1.46)		
Yes	57	4.33 (0.82)			23	21.96 (4.07)	6.21	(3.23-11.95)	17	5.77 (1.46)	1.35	(0.76-2.41)
Other												
No	1208	96.56 (0.44)	1.00	--	85	83.29 (4.17)			251	92.97 (2.18)		
Yes	50	3.44 (0.44)			15	16.71 (4.17)	5.64	(2.78-11.44)	21	7.03 (2.18)	2.13	(1.16-3.89)
Any Drug												
No	1103	86.91 (1.30)	1.00	--	58	57.91 (5.69)			225	81.74 (2.69)		
Yes	155	13.09 (1.30)			42	42.09 (5.69)	4.82	(3.23-7.20)	47	18.26 (2.69)	1.48	(0.96-2.28)
Number												
None	1103	86.91 (1.30)	1.00	--	58	57.91 (5.69)	1.00	--	225	81.74 (2.69)	1.00	--
One	103	9.30 (0.99)	1.00	--	18	19.19 (4.91)	3.10	(1.70-5.65)	29	11.75 (1.87)	1.34	(0.85-2.13)
Two or more	52	3.79 (0.61)	1.00	--	24	22.90 (4.58)	9.06	(5.03-16.30)	18	6.50 (1.73)	1.82	(0.94-3.52)
Dependence												
Drugs												
No	1242	98.77 (0.37)	1.00	--	96	94.42 (0.85)			268	98.26 (0.77)		
Yes	16	1.23 (0.37)			4	5.58 (0.85)	4.73	(2.24-9.99)	4	1.74 (0.77)	1.42	(0.38-5.26)

Crude odds ratio from logistic regression

n's are unweighted. Percentage are weighted

Table 2B. 12-Month prevalence of alcohol and drug use and immigration status. Mexico, three cities survey, 2005.

| | No migrant exp. (n=1,258) | | | | Returning migrant (n=100) | | | | Migrant relative (n=272) | | | |
	n	% (S.E.)	OR1	95% CI	n	% (S.E.)	OR1	95% CI	n	% (S.E.)	OR1	95% CI
Use												
Alcohol												
No	649	49.84 (2.35)	1.00	--	39	35.64 (6.58)			141	49.09 (3.86)		
Yes	609	50.16 (2.35)			61	64.36 (6.58)	1.79	(1.01-3.19)	131	50.91 (3.86)	1.03	(0.77-1.39)
Alcohol - Heavy drinker												
No	1108	87.24 (1.17)	1.00	--	72	69.85 (4.20)			237	84.74 (2.35)		
Yes	150	12.76 (1.17)			28	30.15 (4.20)	2.95	(1.91-4.55)	35	15.26 (2.35)	1.23	(0.90-1.68)
Drugs												
Marihuana												
No	1237	98.02 (0.67)	1.00	--	94	92.08 (1.79)			268	98.28 (0.75)		
Yes	21	1.98 (0.67)			6	7.92 (1.79)	4.27	(1.61-11.32)	4	1.72 (0.75)	0.87	(0.24-3.10)
Crack / Cocaine												
No	1248	99.29 (0.24)	1.00	--	96	93.52 (1.17)			270	99.05 (0.71)		
Yes	10	0.71 (0.24)			4	6.48 (1.17)	9.64	(4.26-21.81)	2	0.95 (0.71)	1.34	(0.24-7.43)
Other												
No	1241	98.84 (0.28)			98	97.04 (2.38)			266	97.76 (0.83)		

	No migrant exp. (n=1,258)				Returning migrant (n=100)				Migrant relative (n=272)			
	n	% (S.E.)	OR1	95% CI	n	% (S.E.)	OR1	95% CI	n	% (S.E.)	OR1	95% CI
Yes	17	1.16 (0.28)	1.00	- -	2	2.96 (2.38)	2.61	(0.46-14.75)	6	2.24 (0.83)	1.96	(0.96-3.99)
Any Drug												
No	1218	96.76 (0.53)			93	91.12 (1.83)			265	97.26 (1.23)	1.00	
Yes	40	3.24 (0.53)	1.00	- -	7	8.88 (1.83)	2.91	(1.43-5.90)	7	2.74 (1.23)	0.84	(0.32-2.23)
Number												
None	1218	96.76 (0.53)	1.00	- -	93	91.12 (1.83)	1.00	- -	265	97.26 (1.23)	1.00	- -
One	31	2.58 (0.47)	1.00	- -	3	3.04 (1.75)	1.25	(0.31-5.06)	4	1.53 (1.07)	0.59	(0.14-2.46)
Two or more	9	0.66 (0.21)	1.00	- -	4	5.84 (1.18)	9.42	(4.16-21.31)	3	1.21 (0.54)	1.83	(0.61-5.48)
Dependence												
Alcohol												
No	1183	93.49 (0.91)			84	86.54 (4.20)			254	92.88 (1.61)		
Yes	75	6.51 (0.91)	1.00	- -	16	13.46 (4.20)	2.23	(0.93-5.36)	18	7.12 (1.61)	1.10	(0.56-2.16)
Drugs												
No	1247	99.35 (0.18)			97	95.06 (0.65)			268	98.26 (0.77)		
Yes	11	0.65 (0.18)	1.00	- -	3	4.94 (0.65)	7.90	(3.87-16.15)	4	1.74 (0.77)	2.69	(0.90-8.02)
Alcohol or drugs												
No	1177	93.13 (0.90)			83	83.90 (2.72)			252	92.20 (1.67)		
Yes	81	6.87 (0.90)	1.00	- -	17	16.10 (2.72)	2.60	(1.62-4.16)	20	7.80 (1.67)	1.15	(0.61-2.16)

Crude odds ratio from logistic regression

n's are unweighted. Percentage are weighted

Table 3A

Lifetime and 12-month odds ratios of alcohol and drug use among return migrants. Mexico, three cities survey, 2005

	Ever used alcohol		Ever used drugs		12 month heavy alcohol		12 month any drug use		12 month alcohol-drug dependence	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Return migrants (yes/no)	3.40	(1.61-7.15)	2.48	(1.33-4.63)	1.69	(1.05-2.70)	2.19	(1.07-4.45)	1.47	(0.86-2.53)
Time in the US										
No migrant	1.00	--	1.00	--	1.00	--	1.00	--	1.00	--
Less than a year	7.59	(1.19-48.43)	1.27	(0.59-2.72)	1.53	(0.92-2.53)	1.70	(0.29-10.04)	0.86	(0.43-1.71)
One to three years	1.46	(0.46-4.62)	6.60	(2.29-19.03)	1.28	(0.50-3.31)	3.41	(0.87-13.34)	2.07	(1.12-3.84)
Four or more years	4.11	(0.65-25.85)	3.72	(1.12-12.40)	4.11	(1.10-15.30)	1.57	(0.11-23.11)	3.53	(0.66-18.78)
X2, [p]	9.92 [0.019]		15.12 [0.002]		6.93 [0.074]		6.49 [0.090]		6.41 [0.093]	
Type of work										
No migrant	1.00	--	1.00	--	1.00	--	1.00	--	1.00	--
Services	†		3.83	(1.05-13.93)	3.83	(1.28-11.49)	3.92	(0.55-28.01)	1.16	(0.30-4.56)
Farming/Building	4.77	(0.52-43.45)	2.32	(1.09-4.94)	2.14	(1.02-4.50)	2.71	(0.68-10.80)	2.10	(0.98-4.53)
Domestic service	1.39	(0.51-3.81)	2.38	(0.86-6.56)	0.60	(0.16-2.24)	†	--	1.39	(0.24-8.05)
Other	16.38	(2.49-107.60)	1.76	(0.67-4.67)	0.25	(0.03-2.32)	1.66	(0.15-19.08)	†	--
X2, [p]	17.39 [0.001]		9.21 [0.056]		17.83 [0.001]		11.63 [0.009]		5.41 [0.144]	
Those who worked-had stress										
No stress	1.32	(0.39-4.54)	5.01	(1.23-20.49)	6.04	(1.75-20.80)	0.85	(0.09-7.66)	0.55	(0.12-2.55)
Medium	2.20	(0.29-16.51)	6.83	(1.78-26.15)	1.98	(0.44-8.94)	4.64	(0.67-32.15)	4.78	(1.31-17.38)
High	4.91	(0.51-46.90)	4.75	(1.03-21.82)	0.70	(0.12-4.03)	3.25	(0.52-20.17)	2.44	(1.16-5.12)
X2, [p]	2.78 [0.428]		15.11 [0.002]		15.74 [0.001]		2.86 [0.413]		17.59 [0.001]	

† Could not be computed due to zero cell
1 Adjusted odds ratio from logistic regression controlling for sex, age, marital status, education and city of residence

Table 3B. Lifetime and 12-month odds ratios of alcohol and drug use among relatives of migrants. Mexico, three cities survey, 2005.

	Ever used alcohol		Ever used drugs		12 month heavy alcohol		12 month any drug use		12 month alcohol-drug dependence	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Migrant relative (yes/no)	1.30	(0.75-2.23)	1.17	(0.63-2.18)	1.12	(0.73-1.71)	0.79	(0.25-2.48)	1.25	(0.60-2.57)
Time in the US										
No migrant	1.00	--	1.00	--	1.00	--	1.00	--	1.00	--
One year	1.17	(0.42-3.23)	1.19	(0.24-5.79)	2.53	(0.73-8.73)	1.11	(0.15-8.45)	3.29	(0.66-16.38)
Two or three years	3.26	(0.69-15.44)	0.27	(0.03-2.47)	1.18	(0.29-4.78)	0.76	(0.03-18.00)	1.06	(0.14-8.25)
Four or more years	1.19	(0.56-2.52)	1.40	(0.80-2.46)	0.91	(0.54-1.55)	0.73	(0.20-2.63)	0.93	(0.57-1.50)
X2, [p]	3.91 [0.272]		6.20 [0.102]		3.65 [0.302]		0.27 [0.966]		2.96 [0.397]	
Type of work										
No migrant	1.00	--	1.00	--	1.00	--	1.00	--	1.00	--
Services	0.85	(0.35-2.04)	0.71	(0.27-1.86)	0.83	(0.30-2.30)	1.44	(0.38-5.42)	0.97	(0.22-4.31)
Farming/Building	1.14	(0.50-2.59)	0.92	(0.39-2.14)	1.72	(0.92-3.19)	0.56	(0.08-3.98)	1.83	(0.60-5.56)
Domestic service	1.44	(0.52-3.99)	3.17	(1.00-10.00)	3.71	(1.22-11.25)	†	--	2.97	(0.92-9.51)
Other	2.21	(0.63-7.79)	1.87	(0.66-5.32)	0.46	(0.16-1.35)	0.58	(0.06-5.18)	0.55	(0.13-2.39)
X2, [p]	2.57 [0.632]		6.33 [0.176]		11.43 [0.022]		1.73 [0.630]		6.85 [0.144]	
Number of migrants in the family										
None	1.00	--	1.00	--	1.00	--	1.00	--	1.00	--
One	1.27	(0.63-2.53)	1.26	(0.65-2.43)	1.36	(0.82-2.25)	0.61	(0.16-2.35)	1.24	(0.44-3.44)

	Ever used alcohol		Ever used drugs		12 month heavy alcohol		12 month any drug use		12 month alcohol-drug dependence	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Two or more	1.36	(0.77-2.41)	1.02	(0.45-2.29)	0.73	(0.33-1.62)	1.17	(0.26-5.25)	1.27	(0.61-2.61)
X2, [p]	1.49 [0.476]		0.64 [0.726]		1.87 [0.393]		0.83 [0.661]		0.58 [0.747]	
How often communicate										
No migrant	1.00	--	1.00	--	1.00	--	1.00	--	1.00	--
At least once or twice a week	1.16	(0.47-2.85)	0.80	(0.40-1.57)	1.30	(0.55-3.06)	0.35	(0.08-1.49)	2.27	(0.75-6.88)
At least once a month or a year	1.39	(0.64-3.04)	1.36	(0.68-2.70)	1.04	(0.64-1.67)	1.00	(0.25-4.08)	0.85	(0.42-1.73)
X2, [p]	1.01 [0.602]		3.14 [0.208]		0.43 [0.805]		2.47 [0.291]		2.93 [0.232]	

[†]Could not be computed due to zero cell

[1]Adjusted odds ratio from logistic regression controlling for sex, age, marital status, education and city of residence