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Traditional gender roles and substance-use behaviors, attitudes, exposure, and resistance among early adolescents in large cities of Mexico

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Abstract

This study investigated the associations between traditional gender roles (TGRs) and substance use among early adolescents in Mexico's largest cities. The sample of seventh grade students ($n = 4,932$) attended 26 public schools in Mexico City, Guadalajara, or Monterrey in 2014. Outcomes included recent alcohol, binge drinking, cigarette and marijuana use, and lifetime poly-substance use; substance-use intentions, norms, attitudes, and expectancies; and substance-use exposure (peer use, offers) and resistance (refusal confidence, refusal skills, and decision-making skills). A TGR scale assessed endorsement of a polarized gender division of family labor and power. As hypothesized, among males, TGRs were consistently associated with poorer outcomes, and this association was usually stronger for males than for females. In contrast, among females there was no evidence that TGRs were associated with desirable outcomes. Contrary to expectations, TGRs predicted poorer outcomes for both females and males, and to equivalent degrees, for binge drinking, cigarette use, positive substance-use expectancies, and friends' approval of substance use, and they predicted poorer outcomes for females but not for males on parental disapproval of substance use and drug-resistance skills. Interpretations highlight the persisting aspects of TGRs in the family and conflicting messages for females as Mexico undergoes changes in its gender order.

Keywords

Substance use; traditional gender roles; Mexican adolescents

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Disclosure of potential conflicts of interest

The submitted material has not been published elsewhere in whole or in part. The paper is not currently being considered for publication elsewhere. All authors have been personally and substantially involved in the work leading to the paper, and will hold themselves jointly and individually responsible for its content. Relevant ethical safeguards have been met in relation to the confidentiality and consent of the patients involved in the research. Where possible and appropriate, the subjects of the research were consulted in the design and execution of the research.

Gender differences in substance use in Mexico

Until recently, Mexican women and men reported large differences in alcohol, tobacco, and other drug use, reflecting traditional gender role (TGR) norms that discouraged substance use by women but accepted or expected it among men (Medina-Mora & Guiot, 2003). The gender gap in substance use, however, has declined rapidly in Mexico, especially among the young and in cities. In a recent national report, lifetime prevalence of alcohol use and heavy episodic drinking was nearly identical among male and female students in Mexican middle schools (*secundarias*) and high schools (*bachilleratos*) (INPRFM, 2015a). A gender gap persisted in primary schools, where males reported about twice the rate of alcohol use compared with females, suggesting that a marked shrinking of the gender gap occurs after the transition from primary to middle school.

Although the gender gap in tobacco use has also narrowed in Mexico, male middle- and high-school students still smoke at higher rates than their female counterparts (INPRFM, 2015c). Meanwhile, illegal drug use is approaching gender parity among Mexican middle- and high-school students (INPRFM, 2015b). Although adolescent Mexican males receive more substance offers than females (INPRFM 2012; Medina-Mora & Guiot, 2003), when offers are made females are equally likely to accept them (Benjet et al., 2007; Wagner et al., 2003).

Traditional and changing gender role expectations

Trends toward increasing gender parity in substance-use rates are reported across the globe, often in connection with declining TGRs (Seedat et al., 2009). Mexican researchers attribute the disappearing gender gap to changes in gender socialization and greater gender equality (Medina-Mora & Guiot, 2003; Villatoro et al., 1998). Gender role expectations in Mexico have been characterized by the polarized cultural ideals of *machismo* and *marianismo* (Stevens, 1973). For males, machismo conveys expectations to exemplify courage and virility; to protect, provide for, and be loyal to the family; and to dominate family decisions (Gutmann, 2003, 2006; Rocha-Sánchez & Díaz-Loving, 2005). Machismo is also associated with hypermasculinity, expressed through aggression, risk-taking, and excessive substance use (Felix-Ortiz & Newcomb, 1995; Goldwert, 1983; Orozco & Lukas, 2000; Unger et al., 2006). The concept of marianismo involves TGRs for females that emphasize nurturance, responsibility, and dedication to the family, spiritual strength to endure self-sacrifice, and submission to men (Castillo, Perez, Castillo, & Ghosheh, 2010; Piña-Watson, Castillo, Jung, Ojeda, & Castillo-Reyes, 2014; Rocha-Sánchez & Diaz-Loving, 2005).

Changes in educational, occupational, and media institutions have transformed TGR norms in Mexico, with implications for substance use. Mexican women have joined the workforce increasingly, changing the gender composition of occupations and professions, exposing a wider array of roles for women (Hirsch, 2003), and expanding women's opportunities as consumers (Medina-Mora et al., 2001; Nehring, 2005). Long-standing gender hierarchies are breaking down as Mexican women pursue postgraduate degrees, enter workplaces, advance into managerial positions, delay motherhood, and face fewer child-rearing constraints (De

Oca, Medina, López-Fuentes, & Escobar, 2013). Gender roles have changed most rapidly and extensively in cities and among the young (Ariza & De Oliveira, 2001; Nehring, 2005). However, even as Mexican youth are exposed and increasingly open to new societal roles, TGRs continue to exert influences (Hernández-Montaña & Tovar, 2016). Expectations for gender equality in educational and career aspirations are tempered by the predominance of machismo in the family (López & Lobo Da Costa, 2008).

Socialization into TGRs has been connected to substance use through several mechanisms. For men in Mexico, celebratory fiesta drinking, intoxication, and illegal drug use are ways to display masculinity by signifying vigor, maintaining control while consuming substances, and showing manly disregard for harmful consequences of misuse, particularly in situations involving male camaraderie (Caetano & Medina-Mora, 1988; Chávez-Ayala, Rivera-Rivera, Leyva-López, Sánchez-Estrada, & Lazcano-Ponce, 2013; Cruz del Castillo et al., 2009; Facundo, Rafael, García Salas, Rodríguez Aguilar, & Alonso Castillo, 2014; Graham & Wells, 2003; Loury & Kulbok, 2007; Unger et al., 2006). In contrast, TGRs have historically been intolerant of substance use by women, particularly to the point of intoxication (Wycoff & Cameron, 2000). Marianismo encourages abstinence by women to protect them and their families from the negative effects of substance use (Perea & Slater, 1999). TGR orientations may also be associated with externalizing (impulsivity, sensation seeking) or internalizing (depression, anxiety) problem behaviors (Oldehinkel, Hartman, Winter, Veenstra, & Ormel, 2004), which increase the risk of substance misuse (Lara-Cantú, Medina-Mora, & Gutiérrez, 1990; Strait, 1999; Williams & Ricciardelli, 1999).

Study objectives and hypotheses

In this article, we explore TGR norms and their association with substance-use behaviors, attitudes, exposure, and resistance among early adolescents in the three largest Mexican cities. We test several research questions. First, is there a gender difference in substance-use behaviors, attitudes, and exposure? Second, do gender differences persist after controlling for TGR norms? If gender gaps in substance use continue to reflect TGR norms, the differences should diminish or disappear after controlling for adherence to these gender norms. Third, is there a significant gender difference in how TGRs predict substance-use outcomes? If gender role norms socialize males and females into the polarized expectations of machismo and marianismo, these norms can be expected to influence males and females in opposite ways: increasing males' vulnerability to substance use but decreasing vulnerability for females. Finally, how consistently do TGRs predict various substance-use outcomes (behavior, attitudes, exposure, resistance) for females versus males, and in which direction?

Methods

Sample, data collection, and human subjects' protection

Data for the study came from questionnaires completed in fall 2014 by seventh grade students in 13 Mexico City, seven Guadalajara, and six Monterrey public middle schools, all serving lower middle class neighborhoods. Five schools met only for morning (*matutino*) sessions, one only in the afternoon (*vespertino*), and the remaining 11 schools had both

morning and afternoon sessions with separate faculty and students. Data collection protocols to ensure human subjects' protections were approved by local university or agency Institutional Review Boards in each city. After receiving information about the study, parents provided passive consent for their child's participation, and could opt their child out of completing the questionnaire. Students were informed about the purpose of the study, that participation was voluntary, and that survey responses would be kept confidential. A total of 4,932 students completed the questionnaire, 2,123 in Mexico City, 1,941 in Guadalajara, and 868 in Monterrey.

Measures

The dependent variables were three sets of self-reported outcomes (see Table 1) that were validated with multicultural adolescent populations in the USA (Hecht et al., 2003) and later used with adolescents in Mexico (Kulis, Booth, & Becerra, 2016; Kulis, Marsiglia, Ayers, Booth, & Nuño-Gutiérrez, 2012; Kulis, Marsiglia, Castillo, Bercerra, & Nieri, 2008; Marsiglia et al., 2014). One set measured substance-use behaviors: frequency of use of alcohol, cigarettes, and marijuana, and of heavy episodic or 'binge' drinking (five or more drinks) in the last 30 days (scored 'none' [0] to 'more than 30 times' [6]), and the number of other types of lifetime illegal drug use, from 0 to 8 (inhalants, meth, cocaine, crack, heroin, tranquilizers, stimulants, and hallucinogens).

Attitudinal antecedents of adolescent substance use were measured with five scales. Substance-use intentions asked whether students would use alcohol, cigarettes, and marijuana in the coming weekend if they had the chance (scored 'definitely no' [1] to 'definitely yes' [4]). Antidrug personal norms asked whether it was okay for students their age to use alcohol, cigarettes, and marijuana (scored 'definitely okay' [1] to 'definitely not okay' [4]). Parental disapproval of the student's use of substances asked how angry the parents would be if they learned that the student had been drunk, smoked cigarettes, and used marijuana (scored 'very angry' [1] to 'not at all angry' [4]). A similar scale measured friends' disapproval of substance use by the student. The fifth scale measured positive expectations—or perceived benefits—of using substances, such as that smoking helps one relax (scored 'strongly disagree' [1] to 'strongly agree' [4]).

The third set of outcomes measured exposure to substance use through peers and direct substance offers, and the ability and likelihood to resist offers. Perceived extent of alcohol, cigarette, marijuana, and other drug use among school peers was a scale scored from 'none' (0) to 'all' (5). Illegal drug offers measured how often the student was offered marijuana and 'other drugs' in the past year, from 'never' (0) to '10 or more times' (4). Drug refusal confidence combined the likelihood of saying no if a family member offered alcohol, a school peer offered a cigarette, and a close friend offered marijuana, scored from 'unable to say No' (1) to 'very surely would say No' (4). Poor decision-making skills were items concerning how the student solves important problems: letting someone else decide, doing what others do, or letting whatever happen without doing anything (scored 'never' [0] to 'always' [4]). The final scale asked students the likelihood they would use each of four effective drug-resistance strategies ('definitely not' [0] to 'definitely yes' [4]) if a friend

offered them a beer at a party: refuse (just say No), give an explanation for declining, leave the situation, or avoid the party because substances would be present.

The TGR norms scale (Knight et al., 2009) measured agreement with items such as families' need to monitor and protect adolescent daughters more than adolescent sons, and wives should support their husbands' decisions even if they disagree (scored from 'not at all' [0] to 'completely' [4]). This scale was also used in a mean-centered interaction term with the student's gender (scored female = 0, male = 1). Several control variables were entered in all multivariate analyses, including the student's age, a proxy measure of the family's socioeconomic status (insufficient money at home for necessities), the student's usual academic grades (from < 70% [1] to 90–100% [4]), whether the school session was morning versus later, and the city location (using dummy variables with Mexico City as the reference).

Analysis strategy

We examined the outcomes and their potential predictors with descriptive statistics and tested whether there were gender differences using t-tests and chi-square tests. Then we performed a series of regression analyses in Mplus 7.4 using robust maximum likelihood estimation to adjust for any non-normality in the distributions and full-information maximum likelihood to adjust for item missingness. Three regression models were estimated for each outcome: one utilizing the total sample that included controls, gender, the TGR scale, and mean-centered interactions between that scale and gender. The second and third were separate models for females and males with the TGR scale and controls as predictors.

Results

Table 1 presents the means and standard deviations for continuous variables and the percentages for categorical variables, separated by gender. Students were predominantly 12 or 13 years old (85%), the typical ages for the first year of *secundaria*. The mean for the socioeconomic status measure corresponded to almost always having enough money at home for necessities. Typical school grades were close to a 'B' average. Most students (68%) attended a morning school session, and more students came from Mexico City and Guadalajara than from Monterrey.

Means close to the minimum for substance-use behaviors reflected relatively low rates of use in the last 30 days except for alcohol, where 28% reported some use. Few students reported recent binge drinking (14%), cigarette use (14%), and marijuana use (9%), or lifetime use of another illegal drug (14%). Substance-use attitudes had less skewed distributions but large majorities of students still reported very nonpermissive drug orientations. If given the opportunity, 85% said they definitively would not use substances and 82% said it was definitely not okay to use substances at their age. In reaction to their use of substances, 70% expected severe disapproval from their parents and 68% expected negative reactions from friends. Over 73% disagreed with the items measuring positive substance-use expectancies. Distributions for substance-use exposure and resistance were more variable. Exposure to substance-using peers was common, with 53% reporting that

some of their school peers used substances, and 55% reported using poor decision-making. However, 90% said they received no substance offers in the last year, 95% said they were sure or very sure to turn down a substance offer, and 82% said they would use a drug-resistance strategy if a friend offered them beer at a party.

The tests of gender differences in Table 1 indicate that, compared with females, males were on average slightly older, earned poorer school grades, and were less likely to attend morning school sessions. There were no gender differences in family socioeconomic status or in city location. On all but two of the substance use outcomes, males reported significantly less desirable mean scores than females, prior to the adjustments for control variables. The exceptions were as follows: females reported more substance-using school peers than males did, and gender differences in substance-use intentions were nonsignificant. Males reported significantly higher scores than females on the TGRs scale (see Figure 1). Notably, only a very small minority of females (3%) and males (8%) expressed consistently strong agreement with the items (scores = 3); despite the significant mean difference by gender, the overall distributions are similar.

Multivariate tests of the predictors of substance-use behaviors, attitudes, exposure, and resistance are presented in Tables 2, 3, and 4. First, there are repeated patterns of effects of the control variables across most outcomes. Despite the narrow range in age, older students generally report less desirable outcomes. Higher SES is seldom a significant influence but has scattered effects, mostly for females. In these instances, higher SES is associated with not only more desirable substance-use behaviors and attitudes, but also more exposure to substance use. Students with higher academic grades report better outcomes on all measures except substance-using peers, and generally this applies to both males and females. On many outcomes, more desirable scores are reported by students in the morning school session, and by students in Guadalajara and Monterrey relative to Mexico City students.

In Table 2 there are two general patterns of associations between TGRs and substance-use behaviors. In pattern (A), more traditional males report significantly more frequent recent alcohol and marijuana use, as well as use of more illegal drugs over the lifetime, whereas TGRs do not predict these outcomes for females. The last predictor, an interaction test, shows that this gender difference in the effects of TGRs is statistically significant for these three outcomes. In the second pattern (B), for recent binge drinking and cigarette use, adherence to TGRs predicts less desirable outcomes for both females and males, without significant gender differences in the magnitude of that effect. Table 2 also shows that the main effect of gender—male versus female differences found in Table 1—diminishes to non-significance or marginal significance after controlling for TGRs.

The attitudinal outcomes in Table 3 fall into several patterns. Following pattern (A), TGRs predict stronger intentions to use substances and less adherence to antidrug personal norms among males only, although the gender interaction effect showed statistically significant gender differences only for intentions. In an unexpected pattern (C), traditional gender norms predict less parental disapproval of substance use among females, with a marginally significant gender interaction. The last two outcomes follow pattern (B): more traditional males and females both report less disapproval of substance use by their friends and stronger

positive drug-use expectancies, with no significant gender difference in this effect. After controlling for TGRs, the gender difference from Table 1 persists for parental and friends' disapproval of drug use and positive drug expectancies, with males more at risk, but gender differences in antidrug personal norms become nonsignificant.

In Table 4, the first four outcomes generally follow pattern (A). More traditional males report more peer substance use, more substance offers, less drug refusal confidence, and more reliance on poor decision-making skills. For two of these outcomes—offers and poor decision-making—traditional females also report less-desired outcomes. However, for all four, there is a significant gender interaction such that TGRs predict worse outcomes more strongly for males than for females. The fifth outcome follows pattern (C): TGRs predict less likelihood of using drug-resistance skills among females only, with a significant gender interaction effect. Finally, the overall gender difference in the outcomes that appeared in Table 1 persists here for peer substance use (the only outcome where females report less desirable scores than males), poor decision-making, and use of drug-resistance skills. However, the gender difference in illegal drug offers and refusal confidence diminishes to non-significance.

Discussion

Our first question was whether gender differences in substance use appeared in a recently drawn sample of middle-school students from Mexico's largest cities. In a nearly consistent pattern, males reported significantly more vulnerability than females on substance-use behaviors, attitudes, exposure, and resistance skills, without controls for TGRs. The only exception was that, compared with males, females perceived more extensive use of substances by school peers. After controlling for TGR norms, the gender differences in substance-use behaviors generally disappeared, but more than half of the gender gaps persisted in the attitudinal, exposure, and drug-resistance measures. Although females retained somewhat less permissive attitudes toward substance use than their male counterparts on multiple measures and reported being less exposed to substance offers, the gender gap in actual substance use narrowed.

The second question was whether traditional gender norms were associated with substance use in opposite ways by gender, increasing vulnerability for males but decreasing it for females. The results supported this hypothesis for males but not for females. There was a clear association between more traditional roles and less desirable outcomes among males on nearly all outcomes. Moreover, TGRs were statistically stronger as predictors of undesirable outcomes for males than for females for most outcomes. These findings align with the traditional Mexican male archetype of machismo, where traditional masculinity increases vulnerability to excessive alcohol and drug use and antisocial behavior (Kleinman, Pérez, & Repetto, 1992).

For females, however, there was no evidence that those who endorsed more traditional roles used substances less, had stronger antidrug attitudes, or were less exposed or resistant to substance offers and substance-using peers. In several instances, TGRs predicted less desirable scores for both females and males and to statistically indistinguishable degrees:

binge drinking, cigarette use, drug-use expectancies, and friends' disapproval of drug use. In two surprising instances, TGRs predicted less desirable outcomes for females but not for males: parental disapproval of substance use and use of drug-resistance skills.

Although the bulk of the findings for males are largely consistent with negative attributes of traditional machismo, the findings for females did not align with the archetype of marianismo, where TGRs decrease vulnerability to risk behaviors. Looking across outcomes, there was an apparent incongruity between substance-use behaviors and attitudes among young women: controlling for other factors, they endorsed permissive substance-use attitudes less strongly than their male counterparts but used substances at equivalent rates. A possible explanation is that although gender roles might be changing more rapidly for females than for males, and changing females' behavior more dynamically, young women remain immersed in elements of traditional culture that maintain a gender double standard in relation to substance use (Medina-Mora, 2001). Even as they increasingly use substances, they may continue to hold less permissive attitudes toward use. The possibly contradictory effects of women's socialization into traditional roles might also generate expressions of resistance to them. Findings showed that TGRs for females were linked to increased use of licit substances only—alcohol binge drinking and cigarettes—not to illegal drugs. Licit substance use may allow adolescent females to express desires to break away from TGRs by adopting behaviors of their male counterparts. Youth growing up in emerging economies across the globe—and females in particular—may adopt consumption patterns of advanced industrial societies, including alcohol use, as a symbol of social position and assertion of nontraditional identity (Room et al., 2002).

Another possible explanation emerges when considering that more traditional females were less likely to use effective drug-resistance strategies, which may result from a lack of preparation to deal with substance offers and inability to skillfully resist them due to the differential socialization of girls and boys (Perea & Slater, 1999). In other Mexican studies, the risk of substance use by adolescent females was closely connected to substance offers from family and romantic partners, more than it was for males (Booth, Marsiglia, Nuño-Gutierrez, & Garcia-Perez, 2014; Kulis et al., 2016).

Although relatively few males and females in this sample adhered strongly to the very TGRs measured in this study, it appears that some females continue to be influenced by the traditional cultural expectations of marianismo, with unexpected consequences for their use of substances (Boff & Murano, 2004). Changes over decades in Mexico have resulted in a reconceptualization of traditional roles of women and men, but they have evolved gradually and selectively over multiple generations. The result is a dynamic readjustment to emerging meanings of masculinity and femininity, shifts in gender roles, expectations and identities, and new patterns of adolescent substance use (De Oca et al., 2013). A Latin American reconceptualization of gender roles is being expressed through the emerging concepts of *caballerismo* and *hembrismo*, which identify positive characteristics paralleling the negative behavioral aspects of machismo and marianismo (Nuñez et al., 2016).

The present study adds to the existing literature by focusing on Mexico's three largest cities and early adolescents entering a period where substance-use initiation accelerates. It is

notable that very large majorities of the students in the study were not using substances, disapproved of substance use, and reported that their parents and friends would have a negative reaction if they learned that the adolescent used substances. Although there was a significant gender difference in the adoption of TGRs, the distributions for males and females were generally the same, with most students endorsing nontraditional orientations.

The findings suggest that although male and female adolescents are exposed to and increasingly adopt a more equalitarian gender paradigm, they continue to reproduce some of its more traditional elements. Male substance use in early adolescence continues to be closely associated with machismo and its expectations for engaging in substance abuse. Ideas about femininity may continue to be strongly associated with marriage and procreation, highly valued roles within the Mexican culture that discourage substance use (Brugeilles, 2010; De Oca et al., 2013). The socialization of adolescents continues to be a strong tool promoting conformity to established societal norms while also allowing the adoption of less-traditional views. Young men and women need to sort through them as they forge their own identities (Hernández-Montaña & Tovar, 2016). Developmentally, as young people reach their late adolescence and achieve greater independence from their parents, their gender role orientations may have more serious implications for substance-use behaviors.

The results have implications for substance-abuse prevention among adolescents in Mexico, other Latin American countries, and Mexican-origin communities in the USA. There is a need to design interventions that address culturally based gender differences and provide alternatives to TGRs. Prevention approaches might aim to nurture internalization in adolescent males (self-worth) and weaken externalization (aggression). Adolescent females may need help to navigate through conflicting gender paradigms and identity formation challenges.

The findings require cautious interpretation. No causal inferences can be drawn from this cross-sectional study and the findings are limited to large Mexican cities. Early adolescents from smaller cities, towns, and rural areas may exhibit more TGRs, and with different consequences for substance use. The study's measure of TGRs had good psychometric properties and was validated with Mexican American youth, but may not capture important nuances of gender socialization in contemporary Mexico (Rocha-Sánchez & Díaz-Loving, 2011). Despite these limitations, the findings provide a contemporary profile of shifting gender roles and their connection to substance use.

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Figure 1.
Traditional gender role scale, distribution by gender.

Table 1

Descriptive statistics for study variables, by gender.

	Range	Female		Male		Test of Mean Differences	Scale Reliability
		M (%)	SD	M (%)	SD		
Age in years	11–15	12.01	0.51	12.07	0.59	$t = -4.13^{***}$	
Family SES: Money for Necessities	0–3	2.53	0.59	2.53	0.57	$t = 0.08$	$\alpha = .75$
Usual School Grades	1–4	3.30	0.72	2.97	0.84	$t = 14.57^{***}$	
Session (<i>Turno</i>):							
Morning (<i>Matutino</i>)		(69%)		(66%)		$X^2 = 7.07^{**}$	
Afternoon (<i>Vespertino</i>)		(31%)		(34%)			
City:							
Mexico City		(44%)		(44%)		$X^2 = 0.02$	
Guadalajara		(40%)		(40%)			
Monterrey		(16%)		(16%)			
Traditional Gender Roles	0–4	1.17	0.93	1.50	1.07	$t = -11.24^{***}$	$\alpha = .76$
Alcohol Frequency	0–6	0.27	0.67	0.34	0.79	$t = -3.27$	
Binge Drinking Frequency	0–5	0.11	0.49	0.15	0.60	$t = -2.47^*$	
Cigarette Frequency	0–6	0.10	0.50	0.14	0.59	$t = -2.46^*$	
Marijuana Frequency	0–6	0.03	0.27	0.08	0.51	$t = -4.17^{***}$	
# Hard Drugs Lifetime	0–8	0.18	0.66	0.23	0.81	$t = -2.02$	
Substance-Use Intentions	1–4	1.13	0.39	1.14	0.42	$t = -0.85$	$\alpha = .78$
Antidrug Personal Norms [†]	1–4	3.85	0.36	3.84	0.40	$t = 1.70^{\dagger}$	$\alpha = .89$
Parental Disapproval of Drugs [†]	1–4	3.74	0.58	3.62	0.75	$t = 6.29^{***}$	$\alpha = .92$
Friends' Disapproval of Drugs [†]	1–5	4.06	1.15	3.78	1.22	$t = 8.09^{***}$	$\alpha = .96$
Positive Drug Expectancies	1–4	1.73	1.00	1.97	1.11	$-t = 7.57^{***}$	$\alpha = .96$
Perceived Peer Substance Use	0–5	1.51	1.18	1.28	1.17	$t = 6.74$	$\alpha = .93$
Offers of Illegal Drugs	0–4	0.12	0.51	0.16	0.59	$-t = 2.29^*$	$\alpha = .84$
Drug Refusal Confidence [†]	1–4	3.77	0.48	3.74	0.51	$t = 1.92^{\dagger}$	$\alpha = .76$

	Female				Male		Test of Mean Differences	Scale Reliability
	Range	M (%)	SD		M (%)	SD		
Poor Decision-Making Skills	0-4	0.45	0.63		0.63	0.82	- <i>t</i> = 8.26***	α = .69
Drug-Resistance Strategies [‡]	1-4	2.59	0.95		2.43	1.02	<i>t</i> = 5.61***	α = .78

N for Females = 2,220 to 2,370. *N* for Males = 2,332 to 2,479.

[‡] *p* .10.
* *p* .05.
** *p* .01.
*** *p* .001.

[‡] Higher scores for these outcomes indicate less risk; for other outcomes, more risk.

Table 2

Traditional gender roles as predictors of substance-use behaviors.

	Alcohol Frequency			Binge Drinking			Cigarette Frequency			Marijuana Frequency			Lifetime Hard Drugs		
	Total	Females	Males	Total	Females	Males	Total	Females	Males	Total	Females	Males	Total	Females	Males
	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>
Constant	-1.277***	-0.858	-1.545***	-1.378**	0.220	-2.151**	-1.504**	-0.832	-1.810*	-1.644**	0.032	-2.296**	-0.858 [†]	-0.265	-1.345*
Age (Years)	0.363	0.676	0.352	0.408	0.407	0.670	0.566	0.620	0.721	0.539	0.500	0.729	0.485	0.569	0.560
	0.094***	0.074**	0.106***	0.097***	0.031	0.133***	0.103***	0.074**	0.115**	0.095***	0.023	0.125***	0.067**	0.041 [†]	0.087**
SES: Enough \$	0.015	0.028	0.014	0.018	0.021	0.032	0.024	0.027	0.034	0.023	0.021	0.032	0.022	0.022	0.029
For Necessities	0.015	-0.011	0.032	0.003	-0.031	0.022	-0.020	-0.085**	0.021	-0.005	-0.030	0.001	0.006	-0.018	0.024
Academic	0.019	0.034	0.024	0.019	0.031	0.027	0.021	0.029	0.030	0.016	0.032	0.023	0.020	0.033	0.021
Grades	-0.098***	-0.095***	-0.097***	-0.103***	-0.110***	-0.094***	-0.088***	-0.056*	-0.099***	-0.052**	-0.039	-0.056**	-0.055*	-0.039	-0.063**
Turno/Session (Matut. vs. Vesp.)	0.018	0.025	0.026	0.017	0.021	0.025	0.014	0.027	0.019	0.020	0.032	0.019	0.022	0.032	0.024
	-0.051	-0.042	-0.056	-0.077*	-0.078*	-0.070*	-0.066*	-0.083*	-0.051*	-0.031	-0.076**	-0.001	-0.063*	-0.097***	-0.034
Guadalajara	0.033	0.037	0.035	0.031	0.038	0.033	0.029	0.041	0.026	0.024	0.024	0.028	0.026	0.025	0.030
	-0.031	0.004	-0.061*	-0.057*	-0.022	-0.087**	-0.084***	-0.057*	-0.108***	-0.084***	-0.049**	-0.112***	-0.078***	-0.042 [†]	-0.112***
Monterrey	0.024	0.029	0.030	0.026	0.030	0.032	0.016	0.023	0.024	0.016	0.016	0.023	0.017	0.024	0.023
	-0.104***	-0.068*	-0.135**	-0.093***	-0.062**	-0.122***	-0.021	0.019	-0.061 [†]	-0.043 [†]	-0.023	-0.056*	-0.073**	-0.047*	-0.093**
Traditional	0.031	0.027	0.039	0.025	0.024	0.033	0.034	0.041	0.032	0.022	0.020	0.028	0.022	0.023	0.028
	0.045 [†]	0.042	0.093***	0.047 [†]	0.051 [†]	0.050**	0.044*	0.045*	0.060*	0.003	0.009	0.095**	0.022	0.017	0.075***
Gender Roles	0.026	0.026	0.021	0.026	0.027	0.019	0.020	0.021	0.024	0.011	0.011	0.035	0.015	0.015	0.017
Gender	0.009			-0.003			0.000			0.030 [†]			-0.001		
Male vs. Female	0.017			0.015			0.021			0.015			0.017		
Trad. Gender Roles	0.035*			0.000			0.011			0.078*			0.038*		
X Gender (MvF)	0.017			0.016			0.020			0.032			0.018		
R ²	0.038	0.024	0.049	0.039	0.030	0.050	0.041	0.041	0.044	0.030	0.014	0.039	0.024	0.018	0.033

Note: Estimates are standardized regression coefficients with standard errors underneath in italics.

Total N= 4,541; Female N= 2,252; Male N= 2,289.

.100' *p*

.10' *p*
**
.05' *p*
*
.10' *p*
†

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Table 3

Traditional gender roles as predictors of substance-use attitudes.

	Use Intentions			Antidrug Personal Norms			Parental Disapproval of Drug Use			Friends' Disapproval of Drug Use			Positive Drug Expectancies		
	Total	Females	Males	Total	Females	Males	Total	Females	Males	Total	Females	Males	Total	Females	Males
	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>	β / <i>SE</i>
Constant	1.276***	1.326**	1.104*	1.653***	1.915***	1.390***	3.143***	3.913***	3.390***	3.995***	3.486***	4.151***	0.849**	1.464***	0.448
Age (Years)	<i>0.325</i>	<i>0.476</i>	<i>0.517</i>	<i>0.663</i>	<i>0.735</i>	<i>1.057</i>	<i>0.295</i>	<i>0.463</i>	<i>0.414</i>	<i>0.287</i>	<i>0.545</i>	<i>0.421</i>	<i>0.312</i>	<i>0.373</i>	<i>0.380</i>
	0.096***	0.101***	0.091**	-0.050***	-0.039	-0.055*	-0.042**	-0.041 [†]	-0.039*	-0.042**	-0.013	-0.065**	0.065***	0.041**	0.087***
SES: Enough \$	<i>0.016</i>	<i>0.018</i>	<i>0.027</i>	<i>0.012</i>	<i>0.029</i>	<i>0.028</i>	<i>0.013</i>	<i>0.022</i>	<i>0.018</i>	<i>0.013</i>	<i>0.023</i>	<i>0.020</i>	<i>0.012</i>	<i>0.013</i>	<i>0.018</i>
	0.002	-0.014	0.015	0.033	0.058*	0.016	0.021	0.036 [†]	0.010	0.010	0.012	0.015	-0.029 [†]	-0.056***	-0.009
For Necessities	<i>0.023</i>	<i>0.033</i>	<i>0.028</i>	<i>0.021</i>	<i>0.025</i>	<i>0.023</i>	<i>0.018</i>	<i>0.020</i>	<i>0.029</i>	<i>0.015</i>	<i>0.019</i>	<i>0.019</i>	<i>0.017</i>	<i>0.013</i>	0.029
	-0.121***	-0.133***	-0.109***	0.078***	0.060*	0.087***	0.065**	0.100***	0.041*	0.070***	0.083***	0.057**	-0.120***	-0.100***	-0.126***
Academic															
Grades	<i>0.025</i>	<i>0.030</i>	<i>0.030</i>	<i>0.015</i>	<i>0.030</i>	<i>0.024</i>	<i>0.019</i>	<i>0.023</i>	<i>0.020</i>	<i>0.012</i>	<i>0.018</i>	<i>0.018</i>	<i>0.019</i>	<i>0.028</i>	<i>0.022</i>
	-0.029	-0.067*	0.007	0.016	0.034	-0.003	0.051**	0.015	0.076*	0.033	0.029	0.032	-0.067**	-0.085**	-0.050*
Turno/Session (Mat. vs. Ves.)															
	<i>0.032</i>	<i>0.033</i>	<i>0.036</i>	<i>0.022</i>	<i>0.028</i>	<i>0.026</i>	<i>0.019</i>	<i>0.016</i>	<i>0.033</i>	<i>0.020</i>	<i>0.030</i>	<i>0.020</i>	<i>0.022</i>	<i>0.032</i>	<i>0.023</i>
	-0.089***	-0.088**	-0.096***	0.073***	0.055*	0.092***	0.044**	0.063*	0.029 [†]	0.076***	0.069**	0.084***	-0.060**	-0.022	-0.093**
Guadalajara															
	<i>0.019</i>	<i>0.028</i>	<i>0.022</i>	<i>0.016</i>	<i>0.022</i>	<i>0.021</i>	<i>0.015</i>	<i>0.028</i>	<i>0.016</i>	<i>0.016</i>	<i>0.023</i>	<i>0.020</i>	<i>0.023</i>	<i>0.026</i>	<i>0.028</i>
	-0.022	-0.012	-0.037	0.028	-0.005	0.058*	0.032 [†]	0.073*	0.002	0.041 [†]	0.012	0.067**	0.007	0.025	-0.007
Monterrey															
	<i>0.028</i>	<i>0.029</i>	<i>0.031</i>	<i>0.024</i>	<i>0.031</i>	<i>0.029</i>	<i>0.018</i>	<i>0.030</i>	<i>0.024</i>	<i>0.023</i>	<i>0.028</i>	<i>0.025</i>	<i>0.019</i>	<i>0.027</i>	0.030
	0.023	0.012	0.093***	-0.034	-0.030	-0.074*	-0.044 [†]	-0.048 [†]	0.003	-0.090***	-0.086***	-0.097***	0.105***	0.100***	0.093***
Traditional															
	<i>0.019</i>	<i>0.018</i>	<i>0.020</i>	<i>0.026</i>	<i>0.025</i>	<i>0.029</i>	<i>0.025</i>	<i>0.026</i>	<i>0.023</i>	<i>0.023</i>	<i>0.023</i>	<i>0.018</i>	<i>0.024</i>	<i>0.022</i>	<i>0.019</i>
	-0.025			0.008			-0.070***			-0.094***			0.062**		
Gender															
	<i>0.016</i>			<i>0.015</i>			<i>0.019</i>			<i>0.016</i>			<i>0.022</i>		
Male vs. Female															
	0.048**			-0.028			0.035 [†]			-0.003			-0.010		
Trad. Gender Roles															
	<i>0.018</i>			<i>0.031</i>			<i>0.020</i>			<i>0.018</i>			0.026		
X Gender (MvF)															
	0.041	0.049	0.038	0.021	0.019	0.025	0.023	0.024	0.013	0.040	0.024	0.028	0.059	0.048	0.053
R ²															

Note: Estimates are standardized regression coefficients with standard errors underneath in italics.

Total N = 4,541; Female N = 2,252; Male N = 2,289.

.100' *d*

.10' *d*
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.05' *d*
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Table 4

Traditional gender roles as predictors of substance-use exposure and resistance.

	Peer Substance Use			Offers of Illegal Drugs			Drug Refusal Confidence			Poor Decision-Making Skills			Hypothetical REAL Strategies		
	Total	Females	Males	Total	Females	Males	Total	Females	Males	Total	Females	Males	Total	Females	Males
	β/SE	β/SE	β/SE	β/SE	β/SE	β/SE	β/SE	β/SE	β/SE	β/SE	β/SE	β/SE	β/SE	β/SE	β/SE
Constant	−0.118	−0.847	0.173	−1.058 *	−0.882	−1.158 *	2.444 ***	2.750 ***	2.282 ***	0.596	0.819	0.525	2.972 ***	2.310 ***	3.223 ***
	0.431	0.639	0.496	0.496	0.750	0.496	0.423	0.746	0.576	0.472	0.623	0.590	0.376	0.513	0.527
Age (Years)	0.064 **	0.084 **	0.044 *	0.067 **	0.063 *	0.066 **	−0.094 ***	−0.094 ***	−0.094 ***	0.005	−0.002	0.009	−0.051 **	−0.016	−0.076 ***
	0.019	0.027	0.022	0.022	0.031	0.023	0.013	0.025	0.022	0.019	0.025	0.027	0.016	0.020	0.024
SES: Enough \$	0.041 *	0.051 *	0.028	0.041 **	0.018	0.058 **	−0.030 *	−0.008	−0.042	−0.016	−0.003	−0.027 †	0.012	−0.003	0.024
For Necessities	0.019	0.023	0.028	0.013	0.018	0.017	0.015	0.026	0.026	0.015	0.022	0.016	0.020	0.026	0.025
Academic	−0.002	0.020	−0.020	−0.068 ***	−0.066 *	−0.065 **	0.104 ***	0.108 ***	0.092 **	−0.028 *	−0.022	−0.030	0.168 ***	0.164 ***	0.168 ***
Grades	0.016	0.016	0.024	0.019	0.026	0.023	0.021	0.018	0.030	0.014	0.016	0.020	0.018	0.021	0.019
Turno/Session (Mat. vs. Ves.)	−0.040	−0.048	−0.033	−0.045	−0.063	−0.031	0.031	0.037	0.025	0.022 †	0.007	0.033 †	0.048 *	0.060 *	0.039
	0.033	0.044	0.028	0.029	0.041	0.030	0.027	0.033	0.026	0.012	0.014	0.017	0.020	0.028	0.030
Guadalajara	−0.078 *	−0.079 †	−0.079 *	−0.082 ***	−0.099 ***	−0.071 *	0.066 ***	0.057 **	0.074 **	0.022	−0.013	0.049 *	0.063 ***	0.093 ***	0.037
	0.034	0.041	0.032	0.018	0.024	0.028	0.017	0.019	0.026	0.015	0.026	0.020	0.016	0.019	0.026
Monterrey	−0.033	−0.014	−0.054	−0.009	−0.001	−0.017	0.054	0.030	0.081 †	0.007	0.005	0.011	0.040	0.066 *	0.016
	0.053	0.047	0.059	0.026	0.016	0.039	0.036	0.033	0.043	0.018	0.023	0.022	0.028	0.028	0.035
Traditional	−0.029	−0.023	0.064 **	0.029 †	0.027 †	0.088 ***	−0.042 †	−0.036	−0.111 ***	0.042 **	0.048 **	0.138 ***	−0.074 ***	−0.073 ***	−0.014
Gender Roles	0.019	0.018	0.023	0.017	0.016	0.021	0.025	0.023	0.025	0.016	0.017	0.022	0.016	0.017	0.024
Gender	−0.103 ***			0.007			0.013			0.095 ***			−0.033 *		
Male vs. Female	0.013			0.017			0.017			0.016			0.013		
Trad. Gender Roles	0.066 ***			0.045 †			−0.048 **			0.079 **			0.044 *		
X Gender (MvF)	0.020			0.027			0.018			0.023			0.019		
R ²	0.024	0.019	0.014	0.027	0.028	0.026	0.035	0.029	0.040	0.029	0.003	0.026	0.050	0.050	0.044

Note: Estimates are standardized regression coefficients with standard errors underneath in italics.

Total N = 4,541; Female N = 2,252; Male N = 2,289.

p .001

p .01
**
p .05
*
p .10
+

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