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Parental Monitoring and Alcohol Use among Mexican Students

Lee Strunin^{a,*}, Alejandro Díaz Martínez^b, L. Rosa Díaz Martínez^c, Timothy Heeren^d, Seth Kuranz^a, Michael Winter^e, Carlos A. Hernández-Ávila^f, Héctor Fernández Varela^g, and Cuauhtémoc Solís Torres^g

Lee Strunin: lstrunin@bu.edu; Alejandro Díaz Martínez: admar@servidor.unam.mx; L. Rosa Díaz Martínez: leonydiaz@hotmail.com; Timothy Heeren: tch@bu.edu; Seth Kuranz: skuranz@bu.edu; Michael Winter: mwinter@bu.edu; Carlos A. Hernández-Ávila: hernand@psychiatry.uchc.edu; Héctor Fernández Varela: hfernandezvar@servidor.unam.mx; Cuauhtémoc Solís Torres: cuau_solis@hotmail.com

^aDepartment of Community Health Sciences, Boston University School of Public Health, 801 Massachusetts Ave., Boston, MA 02118, USA

^bDepartment of Psychiatry and Mental Health, Faculty of Medicine, National Autonomous University of Mexico, Edificio “F” Primer Piso. Circuito Escolar S/N. Ciudad Universitaria. Delegación Coyoacan, México, D.F., 04510, México

^cDepartment of Psychiatry and Mental Health, Faculty of Medicine, National Autonomous University of Mexico/National Institute on Psychiatry Ramón de la Fuente Muñiz, Calzada México-Xochimilco no.101, Colonia San Lorenzo Huipulco, Delegación Tlalpan, México, D.F., 14570, México

^dDepartment of Biostatistics, Boston University School of Public Health, 801 Massachusetts Ave., Boston, MA 02118, USA

^eData Coordinating Center, Boston University School of Public Health, 801 Massachusetts Ave., Boston, MA 02118, USA

^fDepartment of Psychiatry and Alcohol Research Center, University of Connecticut School of Medicine, 263 Farmington Ave., Farmington, CT 06030-2103, USA

^gGeneral Medical Services, National Autonomous University of Mexico, Circuito Escolar S-N Ciudad Universitaria. Delegación Coyoacan, México, D.F., 04510, México

Abstract

Parental monitoring has been described as a protective factor and useful strategy to prevent substance misuse among youths. The aims of this study were to examine whether perceived parental monitoring influences frequency of alcohol use, age of drinking onset and risky drinking

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*Corresponding Author: Dr. Lee Strunin, Department of Community Health Sciences, Boston University School of Public Health, Medical Campus, 801 Massachusetts Avenue, Rm 452, Boston, MA 02118, (617) 638-5199.

Contributors: Lee Strunin facilitated the collaboration with UNAM, defined the study objectives, oversaw the analytic process, prepared the first draft of the manuscript and managed all subsequent revisions. Alejandro Díaz Martínez, L. Rosa Díaz Martínez and Carlos A. Hernández-Ávila designed the alcohol survey and Alejandro Díaz Martínez and L. Rosa Díaz Martínez supervised data collection. Héctor Fernández Varela and Cuauhtémoc Solís Torres assisted with study design and collection of data. Timothy Heeren and Michael Winter conducted the statistical analysis, wrote the methods section and contributed to subsequent drafts of the manuscript. Seth Kuranz conducted literature searches and contributed to drafts of the manuscript. All authors contributed to the final edits and approved the final manuscript.

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among entering public high school and university students in Mexico City. The study is a cross-sectional survey of entering first year students in the high school and university school system of a large public university in Mexico City conducted during registration at the beginning of the school year. In 2008, of 34,840 students accepted to the affiliated high schools, 28,996 students (51.8% female) completed the alcohol survey and of 37,683 students accepted into university 30,084 students (51.5% female) completed the alcohol survey. The findings suggest that compared to students with higher perceived parental monitoring those reporting lower perceived parental monitoring were more likely to report risky behavior. They were more likely to be ever drinkers, frequent drinkers, have earlier age of onset and high AUDIT scores. Overall, higher parental monitoring was strongly associated with being female and lower parental monitoring with being male. Our findings suggest that more research on parental monitoring as a protective strategy against alcohol misuse is needed. Research focusing on cultural factors including gender and age-related norms and familismo would increase knowledge of the association of parental monitoring and alcohol use among Mexican youths, Mexican American youths and potentially youths from other Hispanic backgrounds.

Keywords

alcohol use; Mexican youths; parental monitoring; gender; culture

1. Introduction

Alcohol is the most widely used substance among adolescents and young adults in Mexico. Alcohol contributes to main causes of mortality and morbidity among young people including accidents, violence and homicides, and non-fatal injury and rates of heavy drinking are increasing among Mexican youths (Borges et al., 2008, 2006; Díaz-Martínez et al., 2011; Medina-Mora et al., 2004). The most recent 2008 National Survey on Addictions (NSA), a household survey examining the prevalence of alcohol and drug use in Mexico, found that 11% of males and 7.1% of females ages 12-17 drank 5+ drinks (4+ for females) at least once in their lifetime (INEGI, 2008) while the 2001 NSA found 35.6% of 12-17 year olds reported lifetime alcohol use and 25.7% reported current drinking (INEGI, 2002). Among middle and high school students in Mexico City, 65.8% reported lifetime use, 35.2% reported current drinking and 23.8% consumed 5+ drinks on one occasion (Villatoro et al., 2005) and among entering first year university students in Mexico City, one third of males and one fifth of females reported drinking 5+ drinks on one occasion or drinking to intoxication (Quiroga et al., 2003).

Parental monitoring has been described as a protective factor and useful strategy to prevent substance misuse among youths but few studies have focused on this relationship in Mexico. Broadly defined, parental monitoring is set of skills used by parents in order to remain informed and aware of their child's activities and share concerns (Dishion & McMahon, 1998). More specifically, the construct of parental monitoring includes parental knowledge and attitudes regarding the child's use of free time, activities, whereabouts and friends (Benjet et al., 2007; Bourdeau, Miller, Duke, & Ames, 2011; Moore, Rothwell, & Segrott, 2010; Romero & Ruiz, 2007; Ryan, Jorm, & Lubman, 2010). A review of 22 studies examining parental monitoring and alcohol use showed that increased parental monitoring is significantly associated with later alcohol initiation and decreased alcohol use (Ryan et al. 2010). Both cross-sectional (Chen, Grube, Nygaard, & Miller, 2008; Clark, Nguyen, Belgrave, & Tademy, 2011; Moore et al., 2010; Sessa, 2005) and prospective studies (Bourdeau et al., 2011; Stone, Becker, Huber, & Catalano, 2012; Walls, Fairlie, & Wood, 2009) conducted in the U.S. indicate that increased parental monitoring is associated with reduced alcohol use and the possible negative consequences of use among adolescents.

Studies in other countries show similar outcomes. In the U.K., higher levels of parental monitoring were associated with lower levels of violence and conflict, reduced history of alcohol misuse and less liberal attitudes towards alcohol (Moore et al., 2010). Studies examining parent-child relationship in France and the U.K. (Ledoux, Miller, Choquet, & Plant, 2002) and parental monitoring in Slovakia (Bobakova, Geckova, Klein, Reijneveld, & van Dijk, 2012) found an association between increased parental monitoring and decreased alcohol and drug use.

The aims of the study were to examine whether perceptions of parental monitoring influences frequency of alcohol use, age of drinking onset and risky drinking among entering public high school and university students in Mexico City. Expanding this area of research in Mexico is important for both Mexican youth and Mexican American youth prevention programs since substance use norms among Mexican American youths can reflect not only U.S. norms but norms and other cultural factors in the country of origin or heritage.

2. Material and Methods

The study design is a cross-sectional survey of entering first year students in the high school and university school system of a large public university in Mexico City conducted at the beginning of the school year during the registration period. During registration the university Medical Services routinely administers a self-administered general health survey to all entering high school and university students. In 2008 an additional survey was administered at registration to collect more detailed information regarding alcohol use and perceptions of parental monitoring.

2.1. Sample

In 2008, of 34,840 students accepted to university affiliated high schools, 28,996 students (51.8% female) completed the alcohol survey and of 37,683 students accepted into university at the nine commuter campuses in the Mexico City metropolitan area 30,084 students (51.5% female) completed the alcohol survey.

In the high school sample we excluded 1,950 students (7%) from the analysis due to incomplete or inconsistent data. In the university sample we excluded 2,013 students (7%) from the analysis due to incomplete or inconsistent data and we excluded 5,654 students (20%) because they were over 19 years old. We chose to keep the age of entry into university consistent with the age students from high school would enter university. A total of 27,046 high school students and 22,417 university students were included in the data set for this study (Table 1).

2.2. Measures

The alcohol survey included the Alcohol Use Disorders Identification Test (AUDIT) to examine past-year prevalence of hazardous and harmful drinking (http://whqlibdoc.who.int/hq/2001/WHO_MSD_MSB_01.6a.pdf). The AUDIT includes 10 items examining frequency and intensity of drinking, presence of alcohol dependence symptoms and negative consequences of drinking. The AUDIT yields a total possible score of 40 points. The general health survey includes questions about lifetime and current alcohol use and age of drinking onset. It also included the Silverberg Parental Monitoring Scale that (Silverberg & Small, 1991) uses a 5-point Likert scale from “never” to “always” for the following six items: My parents know where I am after school; If I am going to be home late, I am expected to call my parents; I tell my parent(s) who I am going to be with before I go out; When I go out at night, my parent(s) knows where I am; I talk with my parent(s) about the plans I have with my friends; When I go out, my parent(s) asks me where I am going. The scale has been used

in previous research (Borawski, Ievers-Landis, Lovegreen, & Trapl, 2003; Li, Stanton, & Feigelman, 2000) and found to yield a single-factor structure with factor loadings greater than 0.65 for all six items.

High school and university students were categorized into drinking groups using the AUDIT, frequency of alcohol use, and age of onset questions. Students were categorized as “Ever” drinkers if at least one of their responses to these questions indicated that they were drinkers. Students were categorized as “Never” drinkers if they consistently reported never drinking across the same set of alcohol questions. To better understand drinkers who may be drinking regularly, we divide “Ever” drinkers into those students reporting more frequent drinking (2+ times per month) and less frequent drinking (one time per month or less).

The AUDIT has been shown to reliably identify students experiencing problems (Reinert & Allen, 2007). A score of three points or higher for high school students and six points or higher for university students were found to be appropriate thresholds, above which, students' drinking could be defined as harmful or hazardous. In a study of high school students in Mexico City, it was described that an AUDIT score of three points or higher reliably identified hazardous or harmful drinking (Díaz Martínez et al., 2009). Among university students a score of six points or higher was used to reliably identify hazardous or harmful drinking (Díaz Martínez et al., 2008).

2.3. Analysis

Internal reliability of the perceived parental monitoring scale was examined through Cronbach's Coefficient Alpha. To avoid assuming a linear relation between the parental monitoring scale and the outcomes, the parental monitoring scale was categorized into tertiles within each sample (high school and university).

Sample characteristics and drinking behaviors were stratified by school level (entering high school, entering first year university) and sex. Bivariate associations between parental monitoring and alcohol related problems and age were examined within each stratum through chi-square tests. Multiple logistic regression models examined associations between parental monitoring and alcohol related problems stratified by school level and sex, controlling for age at the time of the survey. To assess potential effect modification between age and parental monitoring, separate multiple logistic regression models were conducted including an interaction term between age and parental monitoring.

3. Results

3.1. Internal Reliability of Parental Monitoring Scale

Psychometric properties of the six item parental monitoring scale were assessed in our sample. Principal component factor analyses of items in both the high school and university samples identified a single factor with factor loadings above 0.65 for all items. The Cronbach's Coefficient Alpha for the parental monitoring scale was 0.81 in the high school sample and 0.83 in the university sample, indicating good internal reliability for the scale.

3.2. Demographics and Drinking Characteristics

Female students comprised over half the sample in both high school (53.2%) and university (56.1%). In high school over two thirds (67.5%) of students were age 15 and in university over half (56%) were 18 years old. There were gender and age differences across the categories of perceived parental monitoring (Table 1). In both high school and university, students reporting higher parental monitoring were significantly more likely than those reporting lower monitoring to be female. Although statistically significant, differences in

age across perceived parental monitoring in both cohorts were subtle. A higher proportion of students in high school reporting lower monitoring were 16 years old, and in university 19 years old, than students reporting higher monitoring.

A majority of students reported being ever drinkers in both high school (71.8%) and university (86.3%). Among the ever drinkers 13% of high school students and almost 30% (28.9%) of university students reported drinking 2+ times a month (Table 1). A significantly higher proportion of students in the lower parental monitoring tertile drank 2+ times per month. The percentage of male and female university students drinking 2+ times per month is higher among students 18 years of age or older, which is the legal drinking age in Mexico (25.7% of males and 15.9% of females aged 17 report drinking 2+ times/month; 29.2% of males and 19.7% of females aged 18 report drinking 2+ times/month; 38.0% of males and 26.8% of females aged 19 report drinking 2+ times/month).

3.3. Drinking Behavior and Perceived Parental Monitoring

Table 2 compares age and alcohol variables across perceived parental monitoring groups stratified by high school and university samples and by sex among ever drinkers. Although the majority of high school students reported drinking onset at 14-15 years old, a significantly higher proportion of students reporting lower monitoring than higher monitoring had an age of onset <14. This pattern was even more evident among university students with almost twice as many males and females in the lower parental monitoring tertile reporting age of onset <14 compared with the higher parental monitoring tertile (Table 2).

A similar pattern is observed for the AUDIT scores. Significantly more students in the lower parental monitoring tertile, compared to the medium and higher tertiles, reported a high AUDIT score (3+ for high school 6+ for university). This association was stronger among university students. Regardless of perceived parental monitoring, males were more likely than females to have high audit scores.

Results of the multiple logistic regression models examining the effects of lower, medium or higher parental monitoring, controlling for age, on being an ever drinker, drinking frequency of 2+ times per month, age of drinking onset and AUDIT score are shown in Table 3. In high school and university, lower parental monitoring was consistently associated with being an ever drinker among both males and females. In high school, female students reporting lower parental monitoring had significantly higher odds of being an ever drinker than male students. Among ever drinkers, the odds of drinking 2+ times a month was higher for all students reporting lower and medium parental monitoring compared to higher parental monitoring. Female high school students with lower parental monitoring had the strongest odds of drinking 2+ times a month.

Lower parental monitoring was also associated with increased odds of having an AUDIT score of 3+ in the high school sample and 6+ in the university sample. Among high school students, females reporting lower parental monitoring had significantly greater odds of reporting a high AUDIT score compared to males. High school and university students with lower parental monitoring compared to those with higher parental monitoring had an increased odds of reporting an age of drinking onset <14.

An additional analysis was performed on the subsample of students who reported drinking 2+ times a month that assessed the effects of perceived parental monitoring, controlling for age, on AUDIT scores (not shown in Tables). Within this subset of drinkers both high school and university students reporting lower parental monitoring had increased odds of having a high AUDIT score. High school males with lower monitoring had 3.29 (95% CI:

2.08, 5.20) times the odds of having a high AUDIT score and females with lower monitoring had 3.16 (95% CI: 1.95, 5.13) times the odds of having a high AUDIT score. Among university students, males with lower monitoring had 2.05 (95% CI: 1.65, 2.55) times the odds of having a high AUDIT score, and females with lower monitoring had 2.06 (95% CI: 1.68, 2.52) times the odds of high AUDIT score.

3.4. Interaction between Perceived Parental Monitoring and Age

In the female university student sample there were significant interactions between age and perceived parental monitoring for two of the outcomes of interest (frequency of drinking and AUDIT score). There were no significant interactions between age and monitoring for the male university sample or for the high school sample. For female university students, lower parental monitoring was more strongly associated with drinking 2+ times per month and reporting a high AUDIT score among 17 year old students than among 19 year old students.

4. Discussion

The parental monitoring construct encompasses a varied set of activities throughout a child's development (Dishion & McMahon, 1998). Studies exploring the associations between parental monitoring and alcohol-related factors illustrate the importance of parent-teen communication and the varying strategies that parents use to understand the habits and substance use behaviors of their teen and their teen's friends (Abar, Fernandez, & Wood, 2011; Bahr, Hoffmann, & Yang, 2005; Bourdeau et al., 2011; Clark et al., 2011; Kopak, Chen, Haas, & Gillmore, 2012; Moore et al., 2010). To our knowledge no studies have focused on this relationship among Mexican youths.

The findings in this study indicate an association between perceived parental monitoring and drinking frequency among both entering high school and university students in Mexico City. Compared to students with higher parental monitoring those reporting lower parental monitoring were more likely to report risky behavior. They were more likely to be ever drinkers, frequent drinkers, have earlier age of onset and high AUDIT scores. A majority of students reported lifetime alcohol use with over twice the proportion of university than high school students drinking 2+ times a month. Students reporting lower parental monitoring drank more frequently than students reporting higher monitoring. In high school similar proportions of males and females with lower, medium and higher monitoring reported drinking 2+ times a month while in university more males than females across all three monitoring group drank 2+ a month.

Our findings also indicate a high proportion of both male and female youths in high school and university with high AUDIT scores. However, in both high school and university more males and females in the lower parental monitoring group, than the middle or high group, reported high AUDIT scores. There was not a major discrepancy between males and females in high school with one third of ever drinkers flagged as risky drinkers. A difference was observed however in the university sample most of whom were of legal drinking age. The difference was also more evident among female than male students. Female students in both high school and university had greater odds of engaging in risky behavior than their male peers. Compared to all students with higher parental monitoring female high school students with lower monitoring had the highest odds of engaging in risky behavior. These findings highlight previous studies in which we and others have found increasing proportions of females with alcohol abuse or dependence problems (Díaz-Martínez et al., 2011; Medina-Mora et al., 2004).

Although our findings show a relationship between perceived parental monitoring and risky alcohol use among entering high school and university students in Mexico City, the data also

suggest that other factors may play an important role in this relationship. Youths reporting lower parental monitoring also reported an earlier age of drinking than those reporting higher parental monitoring. Further a sizeable proportion of underage males and females drank 2+ times a month with those reporting higher monitoring drinking less frequently than students reporting lower monitoring. Studies suggest that the quince años (age 15) celebration represents alcohol onset for many youths in Mexico (Medina-Mora, 2007) and for some parents vigilance may heighten at the time of traditional onset. Similarly it may lessen at legal age of drinking. In Mexico the legal age of drinking is 18 years old and the findings indicate an increase in drinking frequency with legal age and a decrease in higher parental monitoring. Overall, higher parental monitoring was strongly associated with being female and lower parental monitoring with being male. The influence of normative drinking behaviors including gender norms on parental monitoring deserves more attention both among Mexican youths and Mexican American youths.

Studies in the U.S. among Mexican American youths suggest that cultural factors influence parental monitoring. In the U.S. adolescents of Mexican descent are the most rapidly growing adolescent ethnic group, have higher rates of substance use than non-Hispanic white students (Marsiglia, Kulis, Wagstaff, Elek, & Dran, 2005), and report higher rates of substance use than their counterparts in Mexico (Benjet et al., 2007; Delva et al., 2005). Studies in the southwestern U.S. consistently demonstrate that parental monitoring is negatively associated with substance misuse with higher rates of parental monitoring predictive of lower substance abuse among Mexican American adolescents (Nagoshi, Marsiglia, Parsai, & Castro, 2011) and Mexican American youths reporting greater parental closeness and increased parental monitoring less likely to rely on risky behaviors in order to cope with problems (Romero & Ruiz, 2007). Parental closeness is an important dimension of familismo or familism which has been identified as a potential protective cultural value in Hispanic cultures. Familism is a fundamental value in Mexican culture, well-researched among Mexican American populations and shown to impact both attitudinal and behavioral norms (Balls Organista, Organista, & Kurosaki, 2003; Guilamo-Ramos, Bouris, Jaccard, Lesesne, & Ballan, 2009; Marsiglia, Kulis, Rodriguez, Becerra, & Castillo, 2009; Rodriguez & Kosloski, 1998; Sabogal, Marín, Otero-Sabogal, Marín, & Perez-Stable, 1987; Venegas, Cooper, Naylor, Hanson, & Blow, 2012). Understanding the interface of familism and parental monitoring would enhance the study of parental monitoring among Mexican and Mexican American youths and potentially other Hispanic population groups.

There are a number of limitations to this study. The survey was administered at the same time as a mandated wellness survey which requires student identification. Students, particularly under-age drinkers, may not have responded truthfully to some questions because of concern about anonymity. However, the alcohol survey was not mandated and not all students chose to complete it. Concerns for self-selection are mitigated by the large proportion of students (81.5%) completing the survey including a high proportion of heavier drinking students. We do not have data on school attended, and so we cannot control for school or clustering by school in our analyses. This might lead to underestimating standard errors. However, our sampling plan did not depend on school and all schools are represented in our sample. Further, since students completed the survey during school orientation any school effects would reflect differences in their recruitment pools rather than any effect of school culture. The cross-sectional nature of the study limits the ability to describe changes in monitoring or the temporal relationship between perceived parental monitoring and risky drinking behavior. However, restricting the age range from 14-16 in high school and 17-19 years old in university may indicate trends over time in this age group. We do not have data on parental education or employment, neighborhood characteristics, or other socioeconomic indicators that may play a role in parental monitoring. Finally, the perceived parental

monitoring scale is a measure of the students' perceptions and may differ from their parents' perceptions of monitoring.

More research on parental monitoring as a protective strategy against alcohol misuse among is needed including research on the quality of monitoring and not only the amount of monitoring. In the future research focusing on cultural factors including gender and age-related norms and familismo would increase knowledge of the association of parental monitoring and alcohol use among Mexican youths, Mexican American youths and potentially youths from other Hispanic backgrounds.

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Highlights

- 85% of entering high school and university students completed the survey.
- Logistic regression models examined parental monitoring and alcohol related problems.
- Low parental monitoring was associated with risky drinking behavior.
- Parental monitoring and alcohol use was moderated by gender.
- Mexican cultural norms need to be examined in concert with parental monitoring.

Table 1
Demographics and Drinking Characteristics^a

	Overall	Parental Monitoring Tertile		
		Low	Medium	High
High School Sample				
	N = 27,046	N = 9,644	N = 6,254	N = 11,148
	N (%)	N (%)	N (%)	N (%)
Sex				
Male	12,654 (46.8)	5,867 (60.8)	2,804 (44.8)	3,983 (35.7)
Female	14,392 (53.2)	3,777 (39.2)	3,450 (55.2)	7,165 (64.3)
Age				
14	5,915 (21.9)	2,017 (20.9)	1,352 (21.6)	2,546 (22.8)
15	18,261 (67.5)	6,373 (66.1)	4,246 (67.9)	7,642 (68.6)
16	2,870 (10.6)	1,254 (13.0)	656 (10.5)	960 (8.6)
Frequency of use				
Never drinker	7,634 (28.2)	1,879 (19.5)	1,691 (27.0)	4,064 (36.5)
Ever drinker	19,412 (71.8)	7,765 (80.5)	4,563 (73.0)	7,084 (63.6)
2+ times/month	2,527 (13.0)	1,543 (19.9)	484 (10.6)	500 (7.1)
University Sample				
	N = 22,417	N = 8,035	N = 7,209	N = 7,173
	N (%)	N (%)	N (%)	N (%)
Sex				
Male	9,843 (43.9)	4,636 (57.7)	2,883 (40.0)	2,324 (32.4)
Female	12,574 (56.1)	3,399 (42.3)	4,326 (60.0)	4,849 (67.6)
Age				
17	4,642 (20.7)	1,497 (18.6)	1,535 (21.3)	1,610 (22.4)
18	12,549 (56.0)	4,375 (54.5)	4,077 (56.6)	4,097 (57.1)
19	5,226 (23.3)	2,163 (26.9)	1,597 (22.2)	1,466 (20.4)
Frequency of use				
Never drinker	3,075 (13.7)	633 (7.9)	978 (13.6)	1,464 (20.4)
Ever Drinker	19,342 (86.3)	7,402 (92.1)	6,231 (86.4)	5,709 (79.6)
2+ times/month	5,597 (28.9)	2,833 (38.3)	1,676 (26.9)	1,088 (19.1)

^a p<0.0001 for all differences

Table 2

Drinking Characteristics of Ever Drinkers

	Parental Monitoring Tertiles					
	Low		Medium		High	
	Male	Female	Male	Female	Male	Female
High School Sample ^a						
	N = 4,645	N = 3,120	N = 2,033	N = 2,530	N = 2,541	N = 4,543
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Age						
14	861 (18.5)	691 (22.1)	398 (19.6)	527 (20.8)	510 (20.1)	980 (21.6)
15	3,074 (66.2)	2,059 (66.0)	1,374 (67.6)	1,758 (69.5)	1,740 (68.5)	3,175 (69.9)
16	710 (15.3)	370 (11.9)	261 (12.8)	245 (9.7)	291 (11.5)	388 (8.5)
Frequency of use						
2+ times a month	936 (20.2)	607 (19.5)	229 (11.3)	255 (10.1)	195 (7.7)	305 (6.7)
Age of drinking onset						
<14	1,969 (48.4)	1,430 (50.0)	773 (43.9)	899 (39.2)	777 (37.1)	1,370 (35.0)
14-15	2,070 (50.9)	1,420 (49.7)	972 (55.2)	1,388 (60.5)	1,292 (61.7)	2,517 (64.2)
16	31 (0.8)	8 (0.3)	15 (0.9)	8 (0.3)	24 (1.1)	31 (0.8)
Missing	575	262	273	235	448	625
AUDIT score						
High (3+)	2,136 (46.0)	1,456 (46.7)	659 (32.4)	723 (28.6)	611 (24.0)	894 (19.7)
University Sample ^b						
	N = 4,265	N = 3,137	N = 2,506	N = 3,725	N = 1,885	N = 3,824
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Age						
17	720 (16.9)	632 (20.1)	472 (18.8)	814 (21.9)	347 (18.4)	882 (23.1)
18	2,266 (53.1)	1,744 (55.6)	1,375 (54.9)	2,131 (57.5)	1,043 (55.3)	2,182 (57.1)
19	1,279 (30.0)	761 (24.3)	659 (26.3)	780 (20.9)	495 (26.3)	760 (19.9)
Frequency of use						
2+ times a month	1,755 (41.1)	1,078 (34.4)	828 (33.0)	848 (22.8)	464 (24.6)	624 (16.3)

	Parental Monitoring Tertiles					
	Low		Medium		High	
	Male	Female	Male	Female	Male	Female
Age of drinking onset						
<14	575 (14.1)	365 (12.1)	214 (8.9)	299 (8.4)	135 (7.7)	236 (6.5)
14-15	1,794 (44.1)	1,430 (47.2)	965 (40.2)	1,563 (43.8)	602 (34.3)	1,351 (37.3)
16+	1,696 (41.7)	1,233 (40.7)	1,220 (50.9)	1,708 (47.8)	1,020 (58.1)	2,036 (56.2)
<i>Missing</i>	<i>200</i>	<i>109</i>	<i>107</i>	<i>155</i>	<i>128</i>	<i>201</i>
AUDIT score						
High (6+)	1,766 (41.4)	958 (30.5)	745 (29.7)	687 (18.4)	381 (20.2)	433 (11.3)

^a p<0.001 for all differences within the High School sample

^b p<0.01 for all differences within the University sample

Table 3

Logistic Regression Models

Outcome Variable	Parental Monitoring	High School Sample		University Sample	
		Males	Females	Males	Females
		OR ^a (95% CI)	OR ^a (95% CI)	OR ^a (95% CI)	OR ^a (95% CI)
Among Overall Sample					
Odds of Being an Ever Drinker	Low	2.12 (1.94, 2.32)	2.73 (2.48, 3.01)	2.62 (2.25, 3.04)	3.15 (2.73, 3.64)
	Medium	1.48 (1.34, 1.65)	1.58 (1.45, 1.73)	1.54 (1.33, 1.79)	1.66 (1.48, 1.85)
	High (ref)	1.00 (–)	1.00 (–)	1.00 (–)	1.00 (–)
Among Ever Drinkers Sample					
Odds of drinking 2+ times a month	Low	2.96 (2.52, 3.49)	3.31 (2.86, 3.83)	2.12 (1.88, 2.40)	2.65 (2.36, 3.96)
	Medium	1.51 (1.24, 1.85)	1.54 (1.30, 1.84)	1.52 (1.33, 1.73)	1.51 (1.34, 1.69)
	High (ref)	1.00 (–)	1.00 (–)	1.00 (–)	1.00 (–)
Odds of an age of onset <14	Low	1.69 (1.51, 1.89)	1.96 (1.77, 2.16)	1.99 (1.63, 2.42)	1.98 (1.66, 2.35)
	Medium	1.35 (1.18, 1.54)	1.22 (1.09, 1.36)	1.18 (0.94, 1.47)	1.31 (1.10, 1.57)
	High (ref)	1.00 (–)	1.00 (–)	1.00 (–)	1.00 (–)
Odds of a high AUDIT Score ^b	Low	2.65 (2.38, 2.96)	3.55 (3.21, 3.93)	2.77 (2.43, 3.15)	3.41 (3.00, 3.86)
	Medium	1.51 (1.32, 1.72)	1.63 (1.45, 1.82)	1.68 (1.45, 1.93)	1.77 (1.55, 2.01)
	High (ref)	1.00 (–)	1.00 (–)	1.00 (–)	1.00 (–)

Abbreviations: OR, Odds Ratio; CI, Confidence Interval.

^a Adjusted for age.^b A high AUDIT score is defined as 3+ in High School or 6+ in University.