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Parental Style and Its Association With Substance Use in Youth in Argentina

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Abstract

Background—In Europe and the United States, family relationships and parenting behavior can influence youth substance use, but less is known about their influence in Latin American countries.

Objective—To explore whether parenting behavior is associated with substance use among Latin American youth.

Methods—A cross-sectional, school-based survey of middle-school youth (n=3,172) in three Argentinian cities queried tobacco, alcohol, and drug use using items adapted from global youth surveys. Parenting behavior was assessed with previously validated items that tapped into demandingness and responsiveness, separately for mothers and fathers. Multilevel logistic regression models assessed associations between parenting behavior and substance use after adjusting for student characteristics, socioeconomic indicators, sensation seeking, and smoking amongst peers and family members.

Results—Substance use prevalence was 10% for current smoking, 32% for current drinking alcohol, 17% for past 30-day binge drinking (≥ 5 drinks), and 8% for previous year illicit drug use (marijuana or cocaine). Greater maternal demandingness was independently associated with lower

likelihood of current smoking (AOR=0.77; 95% CI 0.64–0.92), current drinking (AOR=0.81; 95% CI 0.71–0.92), binge drinking (AOR=0.77; 95% CI 0.66–0.99, and drug use (AOR=0.71; 95% CI 0.61–0.83). No other parenting behavior were independently associated with substance use, except for paternal demandingness and binge drinking (AOR=0.84; 95% CI 0.74–0.97). For all outcomes, no interactions were found between parenting behavior and student gender.

Conclusions—Among Argentine adolescents, maternal demandingness was the strongest and most consistent correlate of substance use, regardless of adolescent substance use behavior or gender.

Keywords

Adolescents; parenting; substance use; Argentina; Latin America

Introduction

Youth substance use is common in Latin American countries, and Argentina is no exception (SEDRONAR, 2012; WHO, 2010, 2011). Youth substance use results from a complex combination of socio-cultural, biological, interpersonal and socio-environmental factors (Hawkins, Catalano, & Miller, 1992; Kokkevi et al., 2007; Newcomb & Bentler, 1989). Several studies in Europe and the United States have highlighted the importance of family and parenting influences on youth substance use (Baumrind, 1991; Calafat, Garcia, Juan, Becoña, & Fernández-Hermida, 2014a; Jackson, Henriksen, Dickinson, & Levine, 1997; Piko & Balázs, 2012; Thomas, McLellan, & Perera, 2013).

Parenting practices involve the grouping of attitudes and behaviors of parents towards their children. Studies examining the relationship between parenting behavior and youth outcomes have traditionally distinguished between two parenting dimensions: demandingness and responsiveness (Calafat et al, 2014a; Jackson, Henriksen, & Foshee, 1998; Piko & Balázs, 2012). Demandingness refers to parental control of children's behavior. Indicators of parental demandingness include setting and enforcing clear standards of behavior, actively monitoring and supervising a child's activities, and maintaining structure and regimen in a child's daily life (Baumrind, 1991; Becoña et al., 2013; Calafat et al., 2014a; Jackson et al., 1998).

Responsiveness refers to emotional warmth of the parent, involvement in their children's lives, and acceptance and acknowledgment of the child's point of view. Indicators of parental responsiveness include communicating affection, providing comfort, and being involved in social and academic development and recognizing achievement (Baumrind, 1991; Becoña et al., 2013; Calafat et al., 2014a; Jackson et al., 1998). Low parental responsiveness has been associated with lower achievement and higher delinquency and substance use in adolescence (Becoña et al., 2013; Calafat et al., 2014b). With respect to how parenting dimensions are grouped, and whether mothers and fathers were studied, one recent meta-analysis of studies assessing parenting behavior and delinquency found that only a minority of 160 studies assessed both responsiveness and demandingness, with only 20% of these assessing parenting of both mothers and fathers (Hoeve et al., 2009).

Parenting Behavior and Adolescent Substance Use Outcomes

Authoritative parents are those who succeed in being demanding and responsive at the same time. Several studies have found that authoritative parenting is particularly important as a protective factor for adolescent substance use among European and U.S. adolescents (Benchaya et al., 2011; Becoña et al., 2013; Choquet et al., 2008; Jackson, 2002), with authoritative parents having adolescents with the lowest levels of substance and alcohol use (Jackson, Bee-Gates, & Henriksen, 1994; Jackson, 2002; Huver, Engels, Vermulst, & de Vries, 2007; Patock-Peckham, King, Morgan-Lopez, Ulloa, & Moses, 2011).

However, parenting behavior and its impact on substance use may vary according to the cultural context in which parents and children interact (Lorenzo-Blanco, Bares, & Delva, 2013; Calafat et al., 2014a; Calafat et al., 2014b). Indeed, compared to non-Hispanic families in the U.S., Hispanic families have been described as adhering to collectivistic values that influence parenting practices (Romero & Ruiz, 2007; Lorenzo-Blanco et al., in press; Santisteban et al., 2012). Specifically, in research studies, collectivistic values related with more parental demandingness (Romero & Ruiz, 2007) and responsiveness (Lorenzo-Blanco et al., in press; Santisteban et al., 2012). Additionally, in studies with Hispanic adolescents, parental responsiveness appeared to be more or equally protective against substance use than authoritative parenting behavior, highlighting the need to investigate the influence of parenting on adolescent substance use across cultural contexts (Lila, Garcia, & Gracia, 2007; Villalobos, Cruz & Sánchez, 2004).

In surveying studies of Hispanic youth, we identified three studies that addressed parenting and substance use in Latin American youth (Benchaya et al., 2011; Lila, Garcia, & Gracia, 2007; Lorenzo-Blanco et al., 2012). One cross-sectional study of 860 adolescents in Chile examined demandingness for mothers and fathers combined, and found a multivariate negative (protective) association with tobacco use. This study did not report other substance use outcomes (Lorenzo-Blanco et al., 2012). Another study of 230 adolescents in Colombia studied parental responsiveness for mothers and fathers separately (but not demandingness) and found a negative association between maternal but not paternal responsiveness on externalizing behaviors. This study did not measure substance use specifically (Lila, Garcia, & Gracia, 2007). Finally, a study of 231 Brazilian adolescents used an authoritative parenting measure (combining responsiveness and demandingness) for mothers and fathers separately, and found this to be negatively associated (for both fathers and mothers) with general substance and tobacco use, but not alcohol or illicit drug use (Benchaya et al., 2011). Thus, the literature on parenting behavior among Hispanic youth leaves us with an incomplete understanding of how both domains of parenting (i.e., responsiveness and demandingness) for mothers and fathers is associated with substance use outcomes among youth in South America.

The Current Study

The purpose of this cross-sectional study is to investigate Argentinian adolescents' perceptions of responsiveness and demandingness separately for mothers and fathers and their association with multiple substance use outcomes. Strengths of the study include a large sample size, which gives the power to detect significant associations among multiple

parenting covariates, which could be expected to be correlated. The inconsistent findings of published studies on parenting dimensions did not permit us to propose a specific set of hypotheses across substance use outcomes.

Methods

Study sample and procedure

A convenience sample of 33 schools from three large cities in Argentina (Buenos Aires, Córdoba, Tucumán) participated in the study (n=15, 8, 10, respectively), with public schools identified by the Ministry of Health and Ministry of Education (n=18) and private schools identified through personal contacts (n=15). Private schools were included in the sample because 26% of students attend these schools in Argentina (Bottinelli, 2013). Surveys were administered between May and July of 2014, with attempts to recruit every enrolled 8th grade student. Passive consent was requested from parents or caretakers, and students signed an active consent form, allowing for both participations in the current survey and follow-up contact for subsequent surveys. The questionnaire used anonymous link procedures to allow follow-up (Galanti et al., 2007). The research protocol was approved by an NIH-certified human subjects research board in Buenos Aires based at Centro de Educacion Medica e Investigaciones Clinicas (CEMIC).

Development of Questionnaire Measures

The questionnaire included translation of items used in surveys for adolescents previously implemented in Argentina, Mexico, and in the US (Alderete et al., 2009; Ministerio de Salud y Ambiente de la Nación, 2013; Sargent et al., 2005; Thrasher, Jackson, Arillo-Santillán, & Sargent, 2008). Items in English were translated and reviewed by Argentinean Spanish-speaking research staff and pilot tested with students in Buenos Aires to ensure students' understanding of questions, instructions and confidentiality statements.

The self-administered questionnaires were completed in the classroom under the supervision of trained research staff. Questionnaires included questions about demographics, family and school characteristics, school performance, alcohol and illicit drug consumption, smoking, peer and family smoking and drinking, sensation seeking, and parenting behavior.

Measures

Substance Use Outcomes—We assessed substance use using measures commonly employed to assess these behaviors in national surveys of adolescents (Eaton et al., 2012). A respondent was considered a current smoker if he or she responded positively to “During the past 30 days, on how many days did you smoke cigarettes?”. We created similar outcomes for alcohol consumption: current drinking (within the past 30days). For illicit drug use, participants were asked about life-time use of marijuana, and, separately of life-time cocaine or crack use. Participants who used either type of drug in his/her life were considered life-time users.

Independent Variables

Parenting Behavior—Parenting behavior was assessed with questions on responsiveness and demandingness from Jackson’s Authoritative Parenting Index (Jackson et al., 1998), using three items for each parenting dimension. Students used a 5-point response scale to indicate how well certain statements described the parenting behavior of their mother and father, assessed separately. The items used to assess parenting responsiveness were: “She/he makes me feel better when I am upset,” “She/he listens to what I have to say” and “She/he wants to hear about my problems.” For parenting demandingness, the statements were: “She/he tells me what time I have to be home,” “She/he asks me what I do with my friends,” and “She/he knows where I am after school”. Responses from each of the items were summed and divide by the number of items to create an index (range: 1–5 for the responsiveness and demandingness) for the mother and another for the father ($\alpha = 0.82, 0.70, 0.89,$ and 0.92 for mother responsiveness, mother demandingness, father responsiveness, and father demandingness, respectively).

Covariates

We included are range of covariates found in previous studies to be predictors of adolescent substance use, and which also could be associated with parenting behaviors. The covariates included: Demographics and school function (sex, age, grade retention “Have you in your life repeated a grade in school? [yes, no]), socioeconomic indicators (has a job “Do you have a regular job for which you get paid money” [yes, no], attends public or private school, parent education “Please check the highest education that your parents have obtained [responses ranged from incompleteness of primary school, to completion of a university degree]), smoking amongst network members (mother, father, siblings [family smoking assessed though a table in which students were asked to check yes if mother father or siblings smoked] or friend smoking “How many of your five best friends smoke? [0/5 to 5/5]), peer drinking [similar to peer smoking], and sensation seeking (Castrucci & Gerlach, 2006; Kilpatrick, Sutker, & Smith, 1976; Laible & Carlo, 2004; Sargent, Tanski, Stoolmiller, & Hanewinkel, 2010). Sensation seeking was measured using four items: “I like to do scary things”; “I like to explore strange places”; “I like new and exciting experiences, even if I have to break the rules”; “Sometimes I do “crazy” just for fun”(Stephenson, Hoyle, Palmgreen, & Slater, 2003), with responses on a 5-point Likert scale. Responses were summed to create an index (range: 1–5) ($\alpha = 0.79$).

Statistical Analysis

We conducted descriptive analyses on all study variables, with all substance use outcomes treated as dichotomous variables. Bivariate relationships between continuous variables were examined using Pearson correlation coefficients. Multilevel logistic regression models (with random intercepts for school) were used to assess the associations of parenting behavior and each of the four substance use outcomes, assessed separately, providing unadjusted and adjusted estimates and confidence intervals for the odds ratios. All adjusted models included age, sex, parent education, work status and sensation seeking. The adjusted models for current smokers also adjusted for smoking by mother, father, siblings and peers. Alcohol use models were adjusted for peer alcohol use. We also ran fully adjusted models, after which

we introduced an additional interaction term for sex by each of the four parenting variables, each entered separately. Overall Wald chi-square test was used to test if all the fixed effects parameters (excluding the intercept) were simultaneously zero. Missing data was less than 1% for all variables except for parental education, which was 11.9%. To control for respondent bias we imputed parental education using multinomial logistic regression (Van Buuren, 2007). Since the pattern of findings was similar in direction, strength and statistical significance for primary study variables, we present the results from the analyses that used list-wise deletion of missing cases. All data analyses were conducted by one author (AP) using Stata V.13.0 (Stata Corp, College Station, TX, USA).

Results

A total of 3826 first-year students from 33 schools in three large Argentinean cities were invited to participate. Of these, 436 (11%) were absent when the survey was implemented, 45 (1%) had parents who refused their participation, and 173 of students (4%) refused to participate. Therefore, 3172 (83%) students completed the survey. The mean age of participants was 12.8 years (SD=0.95), 42% were female, 46% of their parents had more than eight years of education, 32% attended private school, and 24% had repeated a grade in the past. Means (SD) for the parental responsiveness index was 4.22 (0.88) for mothers and 4.08 (0.91) for fathers; the means for demandingness were 3.91 (1.08) for mother and 3.66 (1.18) for fathers (Table 1).

Table 2 shows bivariate correlations between parenting behavior and the covariates. As shown, demandingness and responsiveness were associated for both mothers ($r=0.49$, $p<0.001$) and fathers ($r=0.62$, $p<0.001$). A negative correlation existed between sensation seeking and mother demandingness ($r=-0.18$, $p<0.001$) and father demandingness ($r=-0.14$, $p<0.001$). Finally, a negative correlation was observed between age and mother demandingness ($r=-0.12$, $p<0.001$) and father demandingness ($r=-0.11$, $p<0.001$).

Multilevel logistic regression models were estimated, regressing each of the youth substance use outcomes on parenting style and other study variables (Table 3). After adjusting for key covariates, mother demandingness was significantly associated with a decreased risk of: current smoking (AOR=0.77; 95% CI 0.64–0.92); current drinking (AOR=0.81; 95% CI 0.71–0.92); binge drinking (AOR=0.77; 95% CI 0.66–0.99); and ever drug use (AOR=0.71; 95% CI 0.61–0.83). Father demandingness was significantly associated only with lower likelihood of binge drinking (AOR=0.84; 95% CI 0.74–0.97). There were no statistically significant interactions between demandingness and responsiveness indices for mother and father separately for any of the outcomes. The overall Wald chi-square test was significant for all estimated models ($p < 0.0001$).

For clinical relevance, the Figure uses data from the adjusted models to illustrate effect size; the Figure shows how the prevalence of current smoking, current drinking, binge drinking and drug use would be expected to decrease as the mother demandingness behavior scale increases. The Figure illustrates that consistent associations predict declines by around 3–8 percentage points for substance use prevalence, net other substance use predictors.

Discussion

In this study of Argentinian adolescents, maternal demandingness showed an independent association with use of multiple substances, after controlling for a number of other established risk factors. Regarding the gender of the child, maternal demandingness was an important and consistent protective risk factor against use of substances for both male and female adolescents. These associations were large enough to account for a 3–8 percent reduction in the prevalence of use across the range of maternal demandingness.

On the face of it, these findings add further conflict to the parenting literature in Latin American adolescents (Villalobos, Cruz & Sánchez, 2004; Lila, Garcia, & Gracia, 2007; Benchaya et al., 2011). Our results contrast with studies of authoritative parenting from Spain (Garcia & Gracia, 2009) in which responsiveness (authoritative and indulgent) seemed to be the most important domain in terms of promoting better youth outcomes there. In a subsequent editorial, Garcia & Gracia (García & Gracia, 2014) speculated that “in the South European and Latin American cultures, considered as horizontal collectivist, even if the children are very connected with their families, the relationship among different generations is expected to be more egalitarian than in vertical collectivist cultures (such as the Asian or Arabic) or individualistic (North American)”. In contrast, our findings suggest that, at least for preventing onset of substance use, demandingness is an important element of parenting style, even in horizontal collectivist cultures. Among Mexican children, Villalobos (Villalobos, Cruz & Sánchez, 2004) reported a stronger association between responsiveness and multiple outcomes. On the face of it, this would be consistent with the findings of Garcia & Gracia. However, a closer look at their findings shows higher (better) scores for more responsive (authoritative and indulgent) parents on academic outcomes and lower (better) scores for more demanding (authoritative and authoritarian) parents on substance use outcomes; this finding is consistent with the results of the present study. Another study of racial/ethnic differences among US adolescents found that Hispanic children of authoritarian parents were more engaged in academic achievement, but that study did not report on substance use (Steinberg et al., 1992). Finally, a Brazilian study (Benchaya et al., 2011) used a parenting measure that combined responsiveness and demandingness so was unable to discriminate between the two. Overall, it appears that there is more support for rule setting as a parenting strategy to prevent substance use among Latino families in the Western Hemisphere, and this applies to multiple substance use outcomes in Argentina. Additionally, the evidence to date suggests that different parenting strategies may be indicated for different outcomes in Latin American adolescents.

Some of the differences among studies could result the way we chose to analyze our data, using continuous values for responsiveness, independent from demandingness. We chose this approach because the data supported a dose-response relation across the continuum of each parenting dimension and we were uncomfortable with the four-typology model (Maccoby & Martin, 1983), which eliminates about half of the data by discarding adolescents who score in the middle tercile. Moreover, we felt that the authoritative construct would be verified if both responsiveness and demandingness showed an independent relation with behavioral outcomes (indeed, higher scores in both domains predicted less substance use, but the relation for responsiveness was not statistically

significant). However, it is worth also noting that the correlation between responsiveness and demandingness within parent is moderately strong (0.49 for mothers and 0.62 for fathers), such that more demanding parents also tend to be more responsive on average.

Once maternal parenting was accounted for, paternal demandingness was associated only with the prevention of binge drinking in this sample. These findings are consistent with other studies in which maternal demandingness had more influence on substance use than paternal demandingness (Baker et al., 1999; Garcia & Garcia, 2009; King & Chassin, 2004). The present study extends this to adolescents in Argentina. The Argentinian cities we surveyed have populations that are derived from European immigrants and emphasize many elements of this culture. It would be very interesting to see how parenting by mothers and fathers relates to substance use in Northwestern Argentina, or in countries like Bolivia, where the predominant cultural influence is more oriented toward Native Americans.

Unexpectedly, the current study did not find that the effects of parenting were any different for boys compared to girls. This finding is interesting in light of the evidence that adolescent relationships with fathers and mothers may vary depending on the gender of the adolescent (Choquet et al., 2008; Patock-Peckham et al., 2011; Scalese et al., 2014). This finding also bodes well for the development of interventions, because it suggests that a focus on the mother would be effective regardless of the gender of the child.

An interesting area of research for interventions could be research to determine whether training aimed at fathers could allow them to be influential over-and-above the effects of maternal parenting, or how important consistency in behavior across parent matters with respect to adolescent substance use outcomes. Although in Latin America, the family centered in the patriarchal authority is less common than previously (Burin & Meler, 1998), women still play a central role in raising early adolescents and have a better insight of and control over daily activities as compared to fathers (Ackard et al., 2006). In addition, maternal parenting dimensions may be more likely in predicting adolescent outcomes because mothers typically spend more time with their adolescents (Larson, Richards, & Perry-Jenkins, 1994).

This study has several limitations which should be acknowledged. As mentioned above, the sample may not be representative of the entire Argentinean youth population, especially compared to cities in the Northwest part to the country, where the Native American culture predominates. However, the schools were selected from three main cities that represent 37% of the population and we included schools with students from different economic backgrounds. The prevalence of tobacco, alcohol and drug use in the sample is similar to the prevalence reported from national surveys carried out by the government (SEDRONAR, 2012), suggesting that the results may be broadly generalizable to urban Argentinean populations.

The present study did not assess parental and sibling drinking which can influence adolescent alcohol use, and future research on the role of parenting behavior on alcohol use among youth in Argentina should assess parental and sibling drinking and drug use. In addition, although parenting behavior was not the primary focus of the survey, the questions

we used have been used in many studies on youth substance use (Dalton, Ahrens, Sargent, Mott, & Beach, 2002; Sargent et al., 2004). Besides, the questions regarding parenting behavior have not been validated in the Argentinean population. However, the questions were determined to be face valid by experts in tobacco research in Argentina, had acceptable reliability (see Methods section), and have been used in a Chilean study (Lorenzo-Blanco et al., 2012). Nevertheless, the skewed nature of the responses suggests that further measurement development may be necessary to better capture variability in parenting behavior in the Argentine context. Such efforts may benefit from including a gender perspective that more completely captures the complex relationship between parenting behavior and substance use in young adolescents. Finally, this is a cross-sectional study, therefore, we cannot provide information on the temporal sequence of events, and longitudinal research may be necessary to confirm our results.

In summary, the current study contributes to the Latin American literature because it is the first to assess the impact of parenting behavior on the substance use behaviors of early adolescents in Argentina. This study suggests that there is a protective association between maternal demandingness and adolescent tobacco, alcohol and illicit drug use. The findings from this study could inform the development of public policies aimed at preventing substance abuse among Argentinean adolescents. Interventions may target the mother–teen relationship as a foundation for change and research may benefit from investigating whether involving consistent support from fathers could increase the beneficial impact of the mother–teen relationship.

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References

- Alderete E, Kaplan CP, Gregorich SE, Mejia R, Perez-Stable EJ. Smoking behavior and ethnicity in Jujuy, Argentina: evidence from a low-income youth sample. *Substance Use & Misuse*. 2009; 44(5): 632–646. <http://doi.org/10.1080/10826080902809717>. [PubMed: 19360537]
- Ackard DM, Neumark-Sztainer D, Story M, Perry C. Parent–child connectedness and behavioral and emotional health among adolescents. *American journal of preventive medicine*. 2006; 30(1):59–66. [PubMed: 16414425]
- Baker J, Rosenthal S, Leonhardt D, Kollar L, Succop P, Burklow K, Biro F. Relationship between perceived parental monitoring and young adolescent girls' sexual and substance use behaviors. *Journal of Pediatric and Adolescent Gynecology*. 1999; 12(1):17–22. [PubMed: 9929835]
- Baumrind D. The influence of parenting style on adolescent competence and substance use. *The Journal of Early Adolescence*. 1991; 11(1):56–95.
- Becoña E, Calafat A, Fernández-Hermida JR, Juan M, Sumnall H, Mendes F, Gabrhelík R. Parental permissiveness, control, and affect and drug use among adolescents. *Psicothema*. 2013; 25(3):292–298. [PubMed: 23910741]
- Benchaya MC, Bisch NK, Moreira TC, Ferigolo M, Barros H. Non-authoritative parents and impact on drug use: the perception of adolescent children. *J Pediatr (Rio J)*. 2011; 87:238–44. [PubMed: 21556486]

- Bottinelli L. ¿Por qué crece la educación privada? *Le Monde Diplomatique* 2013. 2013:1–11.
- Burin, M., Meler, I. Paidós Buenos Aires. 1998. Género y familia: poder, amor y sexualidad en la construcción de la subjetividad.
- Calafat A, Garcia F, Juan M, Becoña E, Fernández-Hermida JR. Which parenting style is more protective against adolescent substance use? Evidence within the European context. *Drug and alcohol dependence*. 2014a; 138:185–192. [PubMed: 24679841]
- Calafat A, Garcia F, Juan M, Becoña E, Fernández-Hermida JR. Which parenting style is more protective against adolescent substance use? Evidence within the European context. *Drug and alcohol dependence*. 2014b; 138:185–192. [PubMed: 24679841]
- Castrucci BC, Gerlach KK. Understanding the association between authoritative parenting and adolescent smoking. *Maternal and child health journal*. 2006; 10(2):217–224. [PubMed: 1655139]
- Choquet M, Hassler C, Morin D, Falissard B, Chau N. Perceived parenting styles and tobacco, alcohol and cannabis use among French adolescents: Gender and family structure differentials. *Alcohol and Alcoholism*. 2008; 43(1):73–80. [PubMed: 17932077]
- Courtney KE, Polich J. Binge drinking in young adults: Data, definitions, and determinants. *Psychol Bull*. 2009; 135(1):142–56. <http://doi.org/10.1037/a0014414>. [PubMed: 19210057]
- Dalton MA, Ahrens MB, Sargent JD, Mott LA, Beach ML. Relation between Parental Restrictions on Movies and Adolescent Use of. *Effective Clinical Practice*. 2002; 5:29–30.
- Eaton DK, Kann L, Kinchen S, Shanklin S, Flint KH, Hawkins J, ... Whittle L. Youth risk behavior surveillance—United States, 2011. *Morbidity and mortality weekly report. Surveillance summaries* (Washington, DC: 2002). 2012; 61(4):1–162.
- Galanti MR, Siliquini R, Cuomo L, Melero JC, Panella M, Faggiano F. EU-Dap Study Group. Testing anonymous link procedures for follow-up of adolescents in a school-based trial: the EU-DAP pilot study. *Preventive medicine*. 2007; 44(2):174–177. [PubMed: 16979751]
- García F, Gracia E. Is always authoritative the optimum parenting style? Evidence from Spanish families. *Adolescence*. 2009; 44(173):101–131. [PubMed: 19435170]
- García, F., Gracia, E. *Parenting Across Cultures*. Springer; 2014. The indulgent parenting style and developmental outcomes in South European and Latin American countries; p. 419–433.
- Hawkins JD, Catalano RF, Miller JY. Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: implications for substance abuse prevention. *Psychological bulletin*. 1992; 112(1):64. [PubMed: 1529040]
- Hoeve M, Dubas JS, Eichelsheim VI, Van der Laan PH, Smeenk W, Gerris JR. The *relationship* between parenting and delinquency: A meta-analysis. *Journal of abnormal child psychology*. 2009; 37(6):749–775. [PubMed: 19263213]
- Huver RM, Engels RC, Vermulst AA, de Vries H. Is parenting style a context for smoking-specific parenting practices? *Drug and Alcohol Dependence*. 2007; 89(2):116–125. [PubMed: 17300879]
- Jackson C. Perceived legitimacy of parental authority and tobacco and alcohol use during early adolescence. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine*. 2002; 31(5):425–432. [PubMed: 12401429]
- Jackson C, Bee-Gates DJ, Henriksen L. Authoritative parenting, child competencies, and initiation of cigarette smoking. *Health Educ Q*. 1994; 21(1):103–16. [PubMed: 8188487]
- Jackson C, Henriksen L, Dickinson D, Levine DW. The early use of alcohol and tobacco: its relation to children's competence and parents' behavior. *American Journal of Public Health*. 1997; 87(3): 359–364. [PubMed: 9096534]
- Jackson C, Henriksen L, Foshee VA. The Authoritative Parenting Index: predicting health risk behaviors among children and adolescents. *Health Education & Behavior: The Official Publication of the Society for Public Health Education*. 1998; 25(3):319–337. [PubMed: 9615242]
- Kilpatrick DG, Sutker PB, Smith AD. Deviant drug and alcohol use: The role of anxiety, sensation seeking, and other personality variables. 1976
- King KM, Chassin L. Mediating and moderated effects of adolescent behavioral undercontrol and parenting in the prediction of drug use disorders in emerging adulthood. *Psychology of Addictive Behaviors*. 2004; 18(3):239. [PubMed: 15482079]

- Kokkevi AE, Arapaki AA, Richardson C, Florescu S, Kuzman M, Stergar E. Further investigation of psychological and environmental correlates of substance use in adolescence in six European countries. *Drug and Alcohol Dependence*. 2007; 88(2):308–312. [PubMed: 17113243]
- Laible DJ, Carlo G. The differential relations of maternal and paternal support and control to adolescent social competence, self-worth, and sympathy. *Journal of Adolescent Research*. 2004; 19(6):759–782.
- Larson RW, Richards MH, Perry-Jenkins M. Divergent worlds: the daily emotional experience of mothers and fathers in the domestic and public spheres. *Journal of personality and social psychology*. 1994; 67(6):1034. [PubMed: 7815300]
- Lila M, Garcia F, Gracia E. Perceived paternal and maternal acceptance and children's outcomes in Colombia. *Social Behavior and Personality: an international journal*. 2007; 35(1):115–124.
- Lorenzo-Blanco EI, Bares CB, Delva J. Parenting, family processes, relationships, and parental support in multiracial and multiethnic families: An exploratory study of youth perceptions. *Family relations*. 2013; 62(1):125–139.
- Lorenzo-Blanco EI, Bares C, Delva J. Correlates of Chilean Adolescents' Negative Attitudes Toward Cigarettes: The Role of Gender, Peer, Parental, and Environmental Factors. *Nicotine & Tobacco Research*. 2012; 14(2):142–152. [PubMed: 22157230]
- Lorenzo-Blanco EI, Schwartz SJ, Unger JB, Romero AJ, Cano MA, Cordova D, Santisteban Des Rosiers SE, Baezconde-Garbanati L, Huang S, Oshri A, Villamar J, Soto D, Patarroyo M. Latino/a Youth Smoking and Depressive Symptoms: A Process-oriented Analysis of Parent Acculturation, Parent Socio-cultural Stress, and Family Processes. *International Journal of Intercultural Exchange*. in press.
- Maccoby, EE., Martin, JA. Socialization in the context of the family: Parent-child interaction. In: Mussen, Paul H., editor. *Handbook of child psychology: formerly Carmichael's Manual of child psychology*. 1983.
- McClure AC, Stoolmiller M, Tanski SE, Worth KA, Sargent JD. Alcohol-branded merchandise and its association with drinking attitudes and outcomes in US adolescents. *Archives of pediatrics & adolescent medicine*. 2009; 163(3):211–217. [PubMed: 19255387]
- Ministerio de Salud y Ambiente de la Nación. Encuesta Mundial de Tabaquismo en Jovenes, Resumen Ejecutivo. Argentina 2012. Buenos Aires, Argentina: Ministerio de Salud. Recuperado a partir de; 2013. http://www.msal.gov.ar/ent/images/stories/vigilancia/pdf/2013-07_GYTS-2012-resumen-ejecutivo.pdf
- Newcomb MD, Bentler PM. Substance use and abuse among children and teenagers. *American psychologist*. 1989; 44(2):242. [PubMed: 2653136]
- Patock-Peckham JA, King KM, Morgan-Lopez AA, Ulloa EC, Moses JMF. Gender-specific mediational links between parenting styles, parental monitoring, impulsiveness, drinking control, and alcohol-related problems. *Journal of Studies on Alcohol and Drugs*. 2011; 72(2):247. [PubMed: 21388598]
- Piko BF, Balázs MÁ. Authoritative parenting style and adolescent smoking and drinking. *Addictive behaviors*. 2012; 37(3):353–356. [PubMed: 22143001]
- Romero AJ, Ruiz M. Does familism lead to increased parental monitoring? Protective factors for coping with risky behaviors. *Journal of Child and Family Studies*. 2007; 16:143–154. DOI: 10.1007/s10826-006-9074-5
- Santisteban DA, Coatsworth JD, Briones E, Kurtines W, Szapocznik J. Beyond acculturation: An investigation of the relationship of familism and parenting to behavior problems in Hispanic youth. *Family Process*. 2012; 51:470–482. DOI: 10.1111/j.1545-5300.2012.01414 [PubMed: 23230979]
- Sargent JD, Beach ML, Adachi-Mejia AM, Gibson JJ, Titus-Ernstoff LT, Carusi CP, ... Dalton MA. Exposure to movie smoking: its relation to smoking initiation among US adolescents. *Pediatrics*. 2005; 116(5):1183–91. [PubMed: 16264007]
- Sargent JD, Beach ML, Dalton MA, Ernstoff LT, Gibson JJ, Tickle JJ, Heatherton TF. Effect of parental R-rated movie restriction on adolescent smoking initiation: a prospective study. *Pediatrics*. 2004; 114(1):149–156. [PubMed: 15231921]

- Sargent JD, Tanski S, Stoolmiller M, Hanewinkel R. Using sensation seeking to target adolescents for substance use interventions. *Addiction*. 2010; 105(3):506–14. <http://doi.org/10.1111/j.1360-0443.2009.02782.x>. [PubMed: 20402995]
- Scalese M, Curzio O, Cutrupi V, Bastiani L, Gori M, Denoth F, Molinaro S. Links between Psychotropic Substance Use and Sensation Seeking in a Prevalence Study: The Role of Some Features of Parenting Style in a Large Sample of Adolescents. *Journal of addiction*. 2014; 2014
- SEDONAR. Quinta Encuesta Nacional a Estudiantes de Enseñanza Media 2009. Informe Regional de Resultados. Buenos Aires Argentina: Secretaria de Programacion para la Prevención de la Drogadicción y la Lucha contra el Narcotráfico; 2012. <http://www.observatorio.gov.ar/investigaciones/Quinta%20Encuesta%20Nacional%20a%20Estudiantes%20de%20Ense%C3%B1anza%20Media%202011.pdf>
- Steinberg L, Dornbusch SM, Brown BB. Ethnic differences in adolescent achievement: An ecological perspective. *American psychologist*. 1992; 47(6):723. [PubMed: 1616171]
- Stephenson MT, Hoyle RH, Palmgreen P, Slater MD. Brief measures of sensation seeking for screening and large-scale surveys. *Drug and alcohol dependence*. 2003; 72(3):279–286. [PubMed: 14643945]
- Thomas RE, McLellan J, Perera R. School-based programmes for preventing smoking. *The Cochrane Database of Systematic Reviews*. 2013; 4 <http://doi.org/10.1002/14651858.CD001293.pub3>.
- Thrasher JF, Jackson C, Arillo-Santillán E, Sargent JD. Exposure to smoking imagery in popular films and adolescent smoking in Mexico. *American journal of preventive medicine*. 2008; 35:95–102. <http://doi.org/10.1016/j.amepre.2008.03.036>. [PubMed: 18617078]
- Van Buuren S. Multiple imputation of discrete and continuous data by fully conditional specification. *Statistical methods in medical research*. 2007; 16(3):219–242. [PubMed: 17621469]
- Villalobos JA, Cruz AV, Sánchez PR. Estilos parentales y desarrollo psicosocial en estudiantes de Bachillerato. *Revista Mexicana de Psicología*. 2004; 21:119–129.
- WHO. *Global strategy to reduce the harmful use of Alcohol*. Geneva: 2010.
- WHO. *WHO report on the global tobacco epidemic, 2011*. Geneva: Tobacco Free Initiative, World Health Organization; 2011.

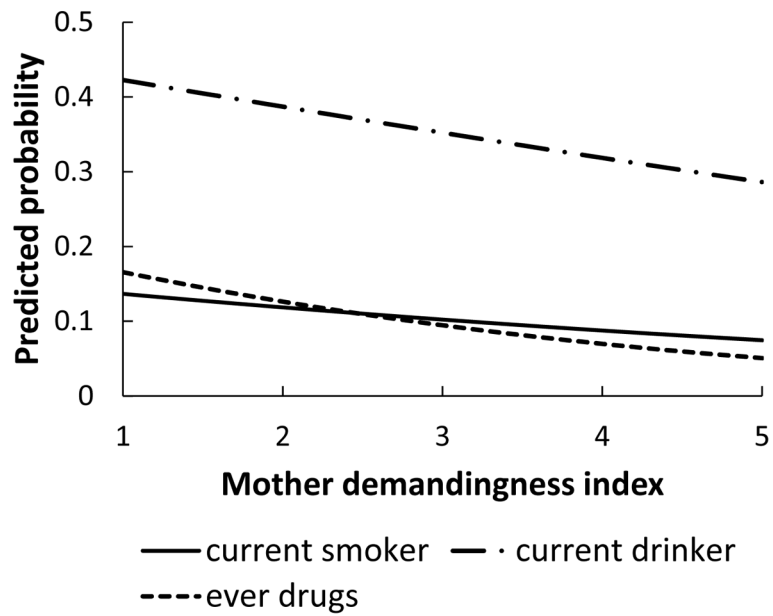


Figure. Relationship between mother demandingness index and predicted probabilities of current smoking, current drinking and drugs use, adjusted by age, sex, parent education, work status and sensation seeking. Current smoker model adjusts also for mother, father, siblings & peer smoking. Drinker models adjust for peer alcohol use.

TABLE 1

Sociodemographic characteristics of the sample (n = 3172)

Students Characteristics	Total n (%)
Gender	
Girls	1335 (42.4)
Age (years)	
12	1341 (42.3)
13–14	1626 (51.3)
15	202 (6.4)
Grade retention	767 (24.4)
Socioeconomic indicators	
Has a job	251 (8.0)
Attends public school	2159 (68.1)
Parent education 7 years	214 (7.7)
Parent education 8–12 years	1289 (46.1)
Parent education 12 years	1292 (46.2)
Parenting behavior, mean (SD)	
Mother	
Responsiveness	4,22 (0,88)
Demandingness	4,08 (0,91)
Father	
Responsiveness	3,91 (1,08)
Demandingness	3,66 (1,18)
Personality characteristics, mean (SD)	
Sensation seeking	3,21 (1,06)
Tobacco use	
Current (30 day) smoker	315 (9.9)
Alcohol use	
Current (30 day) drinker	1028 (32.5)
Drug use	
Ever drug use	260 (8.2)

TABLE 2

Pearson correlation coefficients between parenting behaviors and sensation seeking

Variables	Mother responsiveness	Mother demandingness	Father responsiveness	Father demandingness
Mother responsiveness	1			
Mother demandingness	0.49**	1		
Father responsiveness	0.36**	0.26**	1	
Father demandingness	0.28**	0.49**	0.62**	1
Sensation seeking	-0.11**	-0.18**	-0.04	-0.14**
Age	-0.13**	-0.12**	-0.12**	-0.11**

**
p<0.001

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TABLE 3

Unadjusted and adjusted associations between parenting behavior and youth substance use outcomes.

Variable (reference)	Current (30d) Smoker Odds Ratio (95% CI)		Current (30d) Drinker Odds Ratio (95% CI)		Ever Drugs Odds Ratio (95% CI)	
	Unadjusted	Adjusted*	Unadjusted	Adjusted*	Unadjusted	Adjusted*
Parenting behavior						
Mother						
Responsiveness	0.82 (0.72–0.93)	1.16 (0.96–1.40)	0.82 (0.76–0.90)	1.05 (0.93–1.19)	0.77 (0.67–0.88)	1.03 (0.89–1.20)
Demandingness	0.65 (0.58–0.74)	0.77 (0.64–0.92)	0.70 (0.64–0.76)	0.81 (0.71–0.92)	0.62 (0.54–0.70)	0.71 (0.6–0.83)
Father						
Responsiveness	0.86 (0.77–0.96)	1.06 (0.90–1.26)	0.91 (0.84–0.98)	1.07 (0.96–1.20)	0.85 (0.75–0.96)	0.95 (0.83–1.08)
Demandingness	0.76 (0.69–0.85)	0.89 (0.75–1.06)	0.81 (0.76–0.87)	0.91 (0.82–1.02)	0.78 (0.70–0.87)	0.99 (0.88–1.13)

* All models adjusted for age, sex, parent education, work status and sensation seeking. Current smoker model adjusts also for mother, father, siblings & peer smoking. Drinker models adjust for peer alcohol use.