The Role of Attitudes, Family, Peer and School on Alcohol Use, Rule Breaking and Aggressive Behavior in Hispanic Delinquent Adolescents

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Abstract

Objective—The purpose of this study was to examine ecodevelopmental risk factors associated with alcohol uses, rule breaking and aggressive behaviors among Hispanic delinquent adolescents. Specifically, this study tests the effect of attitudes, family, peer, and school bonding on alcohol use, rule breaking and aggressive behaviors in Hispanic delinquent youth.

Methods—A sample of 235 heterogeneous Hispanic delinquent adolescents was recruited through referrals from the Miami-Dade County's Department of Juvenile Services and from the Miami-Dade County Public School system. Logistic regression methods were utilized to examine the independent effect of each risk factor (attitudes, family, peer, school) and to determine the extent to which these factors are associated with alcohol use, rule breaking and aggressive behaviors.

Results—Family functioning was inversely and significantly related to past 90-day alcohol use in univariate regression ($\beta = -.24$, p = .035) but was not significant in multiple regression ($\beta = -0.09$, p = .556). Peer alcohol use ($\beta = 2.02$, p<0.001) and poor alcohol attitudes ($\beta = 0.59$, p=0.006) were positively and significantly related to past 90-day alcohol use in the final model. Poor alcohol attitudes, family functioning, peer alcohol use, and school bonding were all significantly related to both rule breaking and aggressive behaviors in the final model.

Conclusions—Findings highlight the importance of identifying risk factors at multiple levels to prevent/reduce alcohol use, rule breaking and aggressive behaviors among Hispanic delinquent youth.

Keywords

Hispanic; adolescent; delinquency; alcohol; aggression; ecodevelopmental

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CONFLICT OF INTEREST
None declared.

INTRODUCTION

Underage drinking and delinquency among adolescents in the Unites States (U.S.) represent major public health problems [1]. Findings from the *Youth Risk Behavior Surveillance* indicate that 72.5% of adolescents report having had ever drank alcohol during their life and 41.8% report having had at least one drink of alcohol during the 30 days before the assessment [2]. Although all adolescents in the U.S. are affected by underage drinking, Hispanic adolescents are disproportionately affected. For example, findings from the *Monitoring the Future* study indicate that Hispanic 8th and 10th graders' use of alcohol was higher than both Black and non-Hispanic white 8th and 10th graders', respectively [3]. Furthermore, Hispanic adolescents are more likely to report having had drunk alcohol for the first time before 13 years of age (27.1%), when compared to both their Black (24.9%) and non-Hispanic white (18.1%) counterparts, respectively [2]. This is particularly troublesome given that underage drinking is associated with a myriad of social and behavioral adverse outcomes, including delinquency, aggressive and rule breaking behaviors [4–7].

Early onset of alcohol use in adolescents has been associated with a greater increase in delinquent behaviors, including rule breaking and aggressive behaviors [8, 9]. Given that Hispanic adolescents are more likely to report initiation of alcohol use at a younger age [2], combined with higher rates of alcohol use [3], Hispanics also experience significant disparities with respect to adverse alcohol outcomes when compared to their non-Hispanic white and Black counterparts [10, 11]. For example, Hispanics are more likely to experience negative social consequences including arguments and fights, and legal problems [10], relative to their non-Hispanic white and Black counterparts. In spite of these disparities, relatively little research has been conducted aimed at better understanding the etiology of problem behaviors, including alcohol use, rule breaking and aggressive behaviors, among Hispanic adolescents. Therefore, the purpose of this study was to evaluate individual, family, peer and school risk factors associated with alcohol use, rule breaking and aggressive behaviors in a sample of Hispanic delinquent youth.

Aggressive and rule breaking behaviors among adolescents in general, and Hispanic youth in particular, are a pressing concern. Findings from the Youth Risk Behavior Survey 2009 indicate that Hispanics (36.2%) had a considerably higher rate in engaging in a physical fight when compared to non-Hispanic whites (27.8%), and fell slightly below Blacks (41.1%). Hispanic adolescents (12%) were also at higher risk to be threatened with a weapon on school property, relative to both Black (11.2%) and non-Hispanic whites (7.8%). Targeting alcohol use is one mechanism by which to reduce aggressive behaviors among Hispanic adolescents [12].

Delinquent youth are at greater risk of engaging in alcohol use [13, 14], aggressive and rule breaking behaviors [15, 16], relative to their non-delinquent adolescent counterparts. Hispanic delinquent adolescents, in particular, are at increased risk of engaging in these behaviors, when compared to Black and non-Hispanic white delinquent youth. Hispanic delinquent youth, for example, report higher rates of alcohol use when compared to Blacks, as well as higher rates of aggressive behaviors [15] relative to both Black and non-Hispanic whites. Given these disparities, there remains a need to develop and expand on theoretical models aimed at better understanding the etiology of problem behaviors among Hispanic delinquent youth.

Prevention science has highlighted the importance of taking an ecological approach to better understand the social determinants of problem behaviors in adolescents, including alcohol use, rule breaking and aggressive behaviors [17, 18]. The ecodevelopmental framework [17]

in particular is helpful in conceptualizing integrated developmental risk processes operating in the lives of adolescents [17, 19, 20]. The ecodevelopmental framework [17] draws from Bronfenbrenner's socioecological theory [21] and affirms that social domains in which the adolescent is embedded in both influence and are influenced by the adolescent in a developmental context. These systemic and developmental processes occur on various levels which include macrosystems (e.g., culture and social norms), exosystems (e.g., parent support systems), mesosystems (e.g., family-peer systems) and microsystems (e.g., individual, family). Thus, adolescent problem behaviors, including delinquency and alcohol use, are influenced by a multiplicity of factors, some of which are proximal to the adolescent, whereas others are more distal. From this perspective, the complexity of alcohol use, rule breaking and aggressive behaviors, requires that it be understood as multi-level (e.g., individual, family, peer, school) phenomena, with multiple and interrelated factors and processes contributing to their development. Although several studies have investigated factors associated with alcohol use, rule breaking and aggressive behaviors in Hispanic youth, few studies have examined risk factors at multiple levels in Hispanic delinquent adolescents [12]. Furthermore, although all Hispanic delinquent adolescents are at increased risk of engaging in alcohol use, aggressive and rule breaking behaviors, equally important is to better ascertain gender differences within this population particularly because female and male Hispanic adolescents differ in socialization processes. In fact, some research has highlighted the ways in which gender moderates the effect of family and peers on problem behaviors in adolescents [22, 23]. For example, research has found that relative to males, parental monitoring has a greater influence on aggressive behaviors in females [22]. Furthermore, research has demonstrated that families of substance abusing girls show lower levels of family cohesion and higher levels of family conflict, relative to families of substance abusing boys [24]. However, these studies did not consist of Hispanic delinquent samples or a very small sample (i.e., 8%; [24]) and therefore are not generalizable to Hispanic delinquent adolescents. Thus, there remains the need to determine whether and the extent to which the role of ecodevelopmental factors on Hispanic delinquent youth vary by gender.

PURPOSE OF THE STUDY

The present study represents a secondary analysis of a larger study aimed at evaluating the efficacy of a family-based preventive intervention on an indicated sample of Hispanic delinquent youth. The purpose of the present study was to examine ecodevelopmental risk factors associated with alcohol use, rule breaking and aggressive behaviors in an indicated sample of Hispanic delinquent adolescents. Specifically, this study tests the effects of attitudes, family, peer, and school bonding on alcohol use, rule breaking and aggressive behaviors in Hispanic delinquent youth.

METHODS

Participant Recruitment

Participants were recruited from September 2009 to February 2010 through referrals from both Miami-Dade County's Department of Juvenile Services and from the Miami-Dade County Public School system. To be eligible for this study, adolescents had to: (a) be of Hispanic origin, (b) be between the ages of 12 – 17 years, (c) have plans to remain a resident of South Florida during the study period, and (d) be identified as a delinquent youth. For the purposes of this study, delinquency was defined as having been arrested or as having committed at least one "Level III Behavior Problem," described by Miami-Dade County Public Schools as assault/threat against a non-staff member, breaking and entering/burglary, fighting (serious), hazing, possession or use of alcohol and/or controlled substances, possession of simulated weapons, trespassing, and vandalism. Of the 446 potential

participants, 53 (39%) had intentions to move out of the area during the study period, 50 (36.8%) adolescents did not identify as delinquent, 25 (18.4%) adolescents were not between the ages of 12 and 17 years, and 8 (5.9%) were not Hispanic. Therefore, 310 potential participants met the study's eligibility criteria. Of the 310 eligible participants, 68 did not participate of which 30 (44.1%) refused to participate, 12 (17.6%) had health complications and did not participate, and 26 (38.2%) had work schedule conflicts which prevented them from participating. Therefore, 242 youth and their primary caregivers agreed to participate, signed informed consent and assent forms, and completed the baseline assessment. This study was approved by the University of Miami's Institutional Review Board.

Participants

A total of 235 Hispanic adolescents with a mean age of 14.7 years (*SD*=1.39) were included in the analysis (Seven participants were missing data and were not included in the present study). A total of 152 (65%) boys and 83 (35%) girls participated in the present study. The majority of adolescents were born in the United States (64%) and immigrant adolescents were predominantly from Cuba (25%) and Honduras (16%). Sixty-seven percent of adolescents reported having resided in the United States for over 10 years, 23% reported living in the United States between 3 and 10 years, and 10% less than 3 years. The majority (60%) of participants came from families with a total yearly income of less than $20,000.

Data Collection

Adolescents completed survey assessments *via* laptop computers using the audio-CASI system in her/his preferred language (i.e., English or Spanish) [25]. The content of each questionnaire item along with the response choices were read to adolescents through a set of headphones connected to the laptop computer. Adolescents indicated her/his response using the keyboard or mouse. Participants were compensated $60 for completing the assessment.

Measures

Demographics—Adolescents completed a demographics form on which they provided information including her/his age, gender, ethnic background, country of birth, and number of years lived in the United States.

Alcohol Attitudes—Alcohol attitudes was measured using one item from the CSAP [26], "Getting drunk every now and then fits with the kind of life I want to lead." Responses ranged from 0= "Disagree a lot" to 4="Agree a lot".

Alcohol Use—Alcohol use was measured using one item, "On how many occasions (if any) have you had alcohol to drink - more than just a few sips in the past 3 months?". Responses ranged from 1="0 occasions" to 7="40+ occasions". Because 67.2% of participants reported no alcohol use in the past 90 days, this variable was treated as a binary variable and coded 0="no" and 1="yes".

Rule Breaking Behavior—Rule breaking behavior was assessed using 15 items ($\alpha = .86$) from the subscale of the Youth Self Report [YSR; 27]. For example, participants were asked, "I break rules at school, home or elsewhere." Responses ranged from 0="Not true" to 2="Very true or Often true." A total score of these 15 items were created for rule breaking behavior.

Aggressive Behavior—Aggressive behavior was assessed using 17 items ($\alpha = .86$) from the Aggressive Behavior subscale of the Youth Self Report [YSR; 27]. Adolescents were

asked, for example, "I get in many fights." Responses ranged from 0="Not true" to 2="Very true or Often true." A total score of these 17 items were created for aggressive behavior.

Family Functioning—Family functioning was assessed using adolescent reports of five indicators: parental involvement, positive parenting, family communication, parent-adolescent communication and parental monitoring over peers. Parental involvement and positive parenting were assessed using the corresponding subscales from the Parenting Practices Scale [28]. Parental involvement was measured with 17 items (α = .86). Adolescents were asked, for example, how often have parents talked with them about what they had actually done during the day? Positive parenting was measured with 9 items (α = .81). For example, adolescents were asked, how often have parents given them a wink or a smile when they have done something their parents like or approve of. All Items were rated on a 4 point Likert scale from 0= "never" to 3= "often". Family communication (3 items, α = .72) was assessed using the corresponding subscale from the Family Relations Scale [29]. For example, adolescents were asked to what extent the family knows what he/she means when he/she says something [29]. Adolescents responded on a 4 point Likert scale ranging from 1 = "Not at all true" to 4 = "Almost always or always true". Parent-adolescent communication (20 items, α = .84) was assessed using the Parent-Adolescent Communication Scale [30]. For example, adolescents were asked to what extent they can discuss beliefs with their mother without feeling restrained. Adolescents responded on a 5 point Likert scale ranging from 1 = "Strongly Disagree" to 5 = "Strongly Agree". The Parent Relationship with Peer Group Scale [31] was used to obtain adolescent reports (6 items, α = .80) of parental monitoring attempts to actively supervise their adolescents and know their adolescents' friends. For all five family functioning indicators, higher scores on the subscale represent higher family functioning on each indicator.

Peer Alcohol Use—Perceived peer alcohol use (1 item, α = .80) was measured using an adapted substance use item from the Monitoring the Future Survey [3]. The substance use item was adapted by replacing "have you" with "how many of your friends have". Adolescents were asked, "How many of your friends have been high or drunk from drinking alcoholic beverages in their lifetime." Response choices ranged from 1= "none of them" to 4= "all of them". This variable was treated as a binary variable and coded 0="no to perceived peer alcohol use" and 1= "yes to perceived peer alcohol use".

School Bonding—Adolescent reports of school bonding were gathered using the school bonding subscale (8 items, α = .86) from the People in My Life [32] measure. The school bonding measure assesses the extent to which the adolescent enjoys school and feels connected to classmates and teachers and was reverse coded so that higher scores would reflect less bonding to school. For example, adolescents were asked, "Most mornings I look forward to going to school". Responses ranged from 1= "Almost never or never true" to 4= "Almost always or always true". A total score from these 8 items were created.

Analytic Strategy

A descriptive statistics analysis was conducted on both the outcome and predictor variables. The data analytic strategy then proceeded in three steps. First, a measurement model was estimated to ascertain the feasibility of collapsing multiple indicators of family functioning into a single latent variable (all other variables were measured using observed variables). This was done by conducting confirmatory factor analyses (CFA). The fit of the model was evaluated primarily in terms of factor loadings, the comparative fit index (CFI), which compares the hypothesized model to a null model with no paths or latent variables; and the root mean square error of approximation (RMSEA), which estimates the extent to which the covariance matrix specified in the model deviates from the covariance matrix observed in

the data. CFI values of .95 or greater and RMSEA values of .06 or less are indicative of good model fit [33]. The family functioning latent variable was used in subsequent regression analyses.

Second, regression analyses with the family functioning latent variable and the other predictors were conducted to examine the relations between these factors and the three outcome variables (alcohol use, aggression, rule breaking behavior). Specifically, we ran multiple regressions with ecodevelopmental domains and attitudes entered sequentially (family, peer, school, individual). Thus we estimated a model with four steps to test the effects of each predictor variable on each outcome variable (alcohol, aggression, rule breaking behavior). First, we examined the effect of family functioning on past 90 day alcohol use in a univariate regression model. Second, we evaluated the effect of peer alcohol use, controlling for family functioning, on past 90 day alcohol use. Next, we examined the joint effect of family functioning, peer alcohol use and school bonding on past 90 day alcohol use. Finally, we evaluated all predictor variables on past 90 day alcohol use. The same analytic strategy was conducted to evaluate both the rule breaking and aggressive behavior outcomes. All analyses were conducted using Mplus version 6.11 [34].

RESULTS

A descriptive statistics analysis indicated that 32.8% of adolescents reported past 90 day alcohol use. The mean score of rule breaking behavior was 6.98 (SD=5.47) and aggressive behavior 8.56 (SD=6.34), respectively (Table 1).

Measurement Models

Family Functioning—A confirmatory factor analysis indicated that all five indicators of family functioning loaded significantly onto a single latent construct. The standardized factor loadings were .64, .81, .71, .67 and .52 for positive parenting, parent involvement, parent-adolescent communication, family communication and parental monitoring over peers, respectively. The model fit indices also suggested a good fit (X^2=1.24, df=4, p=0.87; CFI=0.999 and RMSEA<0.001).

Regression Analyses

Alcohol use—Family functioning was inversely and significantly related to past 90-day alcohol use in the univariate model (β = −.24, p = .035). After entering peer alcohol use in the model, family functioning became non-significant (β = −0.22, p=0.10.), whereas peer alcohol use was significantly related to alcohol use (β =2.21, p<0.001). Peer alcohol use remained significant (β = 2.16, p <0.001) after controlling for both family functioning and school bonding. Both family functioning (β = −.15, p=0.297) and school bonding (β = −0.05, p=0.149) were non-significant in this model. Finally, poor alcohol attitudes (β = 0.59, p=0.006) and peer alcohol use (β = 2.02, p<0.001) were positively and significantly related to past 90-day alcohol use, while school bonding (β = −.04, p = .247) and family functioning (β = −0.09, p = .556) remained non-significant (Table 2).

Rule breaking behavior—Family functioning was inversely and significantly related to rule breaking behavior in the univariate model (β = − 1.41, p <0.001). After entering peer alcohol use in the model, both family functioning (β = −1.28, p<0.001) and peer alcohol use (β =3.07, p<0.001) were significantly related to rule breaking behaviors. Once school bonding was entered in the model, family functioning (β = −0.99, p <0.001), peer alcohol use (β =2.85, p<.001), and school bonding (β = −0.19, p=0.004) were significantly related to rule breaking behaviors. Finally, poor alcohol attitudes (β = 2.32, p<0.001), family functioning (β = −0.77, p=0.003), peer alcohol use (β = 2.05, p=0.002), and school bonding

($\beta = -0.16$, p = 0.011) were significantly related to rule breaking behaviors. The final model accounted for 30% of the variance (Model X^2=94.8, df=43, p<0.001, R^2=0.30).

Aggressive behavior—Family functioning was significantly related to aggressive behaviors in the univariate model ($\beta = -1.76$, p <0.001). After entering peer alcohol use, family functioning ($\beta = -1.59$, p<0.001) and peer alcohol use ($\beta = 2.67$, p=.001) were significantly related to aggressive behaviors. Once school bonding was entered in the model, family functioning ($\beta = -1.24$, p <0.001), peer alcohol use ($\beta = 2.39$, p=0.002), and school bonding ($\beta = -0.23$, p=0.002) were significantly related to aggressive behaviors. Finally, poor alcohol attitudes ($\beta = 1.52$, p=0.001), family functioning ($\beta = -1.08$, p=0.001), peer alcohol use ($\beta = 1.87$, p=0.016), and school bonding ($\beta = -0.21$, p = 0.003) were significantly related to aggressive behaviors. The final model accounted for 25% of the variance (Model X^2=92.6, df=43, p<0.001, R^2=0.25).

Post hoc Analysis

A post hoc analysis was conducted to examine whether and the extent to which the effect of each predictor variable on each outcome varied by gender. The interaction terms were created by 'multiplying gender with the family functioning latent variable and the observed predictors (peer alcohol use, school bonding and alcohol use attitudes). The interaction with the family functioning latent variable was created using Mplus, which can define an interaction between a continuous latent variable (i.e., family functioning) and an observed variable (i.e., gender). If a significant interaction was observed, which suggests the effect of predictor on outcome vary by gender, we further conducted multiple group regression analysis by gender. In multiple group analysis, the path coefficients from predictor to outcome were freely estimated across gender if the interaction was significant, whereas for those predictors whose interaction was not significant, regression path coefficients were constrained to be equal.

We observed a significant family functioning by gender interaction when predicting aggressive behavior ($\beta = -1.32$, p=0.034) (Table 3). Multi-group regression analyses found family functioning was a significant predictor of aggressive behaviors for girls ($\beta = -1.76$, p= 0.001), but not for boys ($\beta = -0.57$, p= 0.121) (Fig. 1). The alcohol attitudes by gender interaction was significant when predicting rule-breaking behaviors ($\beta =1.93$, p= 0.022). We found alcohol attitudes was a stronger predictor of rule-breaking behaviors for girls ($\beta =3.74$, p<0.001) than for boys ($\beta =1.79$, p<0.001)[1] (Fig. 2).

DISCUSSION

The purpose of this study was to examine the role of attitudes, family, peer and school risk factors on alcohol use, rule breaking and aggressive behaviors among Hispanic delinquent youth. In addition, we sought to examine whether and the extent to which gender moderated any such effects. To date, few studies have examined factors associated with alcohol use, rule breaking and aggressive behaviors among Hispanic delinquent youth from an ecodevelopmental framework [17].

Findings from the present study identified ecodevelopmental [17, 19, 35] risk factors operating in the lives of Hispanic delinquent youth. One interesting finding from the present study is that family functioning was a significant predictor of past 90 day alcohol use in univariate analysis, however was non-significant in multivariate analysis. There are two

[1]Family functioning measurement model was first tested for measurement invariance between boys and girls. The results suggested measurement invariance across gender with respect to factor loadings and the intercepts ($\Delta\chi^2$(8)= 2.67, p=.95).

possible explanations for this. It is possible that family functioning could mediate the effects of peer alcohol use on past 90 day alcohol use [36]. Thus, future research could test the mediation effects of family functioning on past 90 day alcohol use. In addition, it is also possible that there is a shared variance between both family functioning and peer alcohol use. Multivariate analysis suggest that poor alcohol attitudes and peer alcohol use were significant predictors of past 90-day alcohol use among Hispanic delinquent adolescents. These findings confirm previous research indicating that both peer alcohol use [37] and negative attitudes [38] towards alcohol are risk factors for alcohol use among Hispanic adolescents. These findings also extend previous findings in that a dearth of research exists which examine these risk factors in a sample of Hispanic delinquent youth [39].

Another important observation from this study is that at each sequential step, poor alcohol attitudes, peer alcohol use, family functioning and school bonding were all significant predictors of both rule-breaking and aggressive behaviors. These findings confirm previous research indicating that problem behaviors, including rule breaking and aggressive behaviors, may best be understood in the context of multiple and interrelated ecological determinants [19, 40]. These findings suggest the need for the development of interventions aimed at targeting multiple domains operating in the lives of Hispanic delinquent youth to further prevent/reduce problem behaviors [41]. Future research should explore additional risk factors (e.g., parental mental health) located in ecological domains (e.g., family) in the lives of Hispanic delinquent adolescents [39].

Previous research has indicated that family functioning is a stronger predictor for alcohol use in girls but not among boys [42]. In post hoc analyses, however, we did not find a significant interaction between family functioning and gender when predicting past 90 day alcohol use (i.e., p=.056). In addition, previous studies indicate that the effect of family functioning on aggressive behaviors is universal across gender [43]. These studies are limited, however, in that the samples consisted of non-delinquent and non-Hispanic adolescents. In addition, post hoc analysis indicated that family functioning was a significant protective factor for girls, but not for boys. One possible explanation for this finding is that family functioning may be more central and salient in the lives of Hispanic girls, whereas Hispanic boys may be more influenced by other systems (e.g., peer). Further research is needed to better ascertain gender differences in relation to family functioning and alcohol use and aggressive behaviors among Hispanic delinquent youth.

LIMITATIONS AND CONCLUSIONS

It is also important to note the limitations of this study. First, this study used a cross sectional design. Longitudinal studies are needed to further examine ecodevelopmental risk factors on alcohol use, aggression and rule breaking behaviors. Second, all measures collected were self report. This may be of particular concern with respect to perceived peer alcohol use as participants may over report behaviors, particularly among those youth who report alcohol use [44]. A third limitation of the study is failure to include peer violence as a potential confounding variable. A growing body of literature has demonstrated the effects of peer violence on adolescent problem behaviors, including alcohol use [45]. Future studies, therefore, should include peer violence as a potential confounding variable. Finally, given that this sample consisted of Hispanic delinquent youth, the findings from this study may not generalize to the Hispanic youth general population.

Nonetheless, the study findings identify ecodevelopmental risk factors associated with alcohol use, rule breaking and aggressive behaviors in a sample of Hispanic delinquent youth, an understudied population in prevention research. Thus, the present study provides

possible targets for interventions to prevent/reduce alcohol use, rule breaking and aggressive behaviors among Hispanic delinquent adolescents.

Acknowledgments

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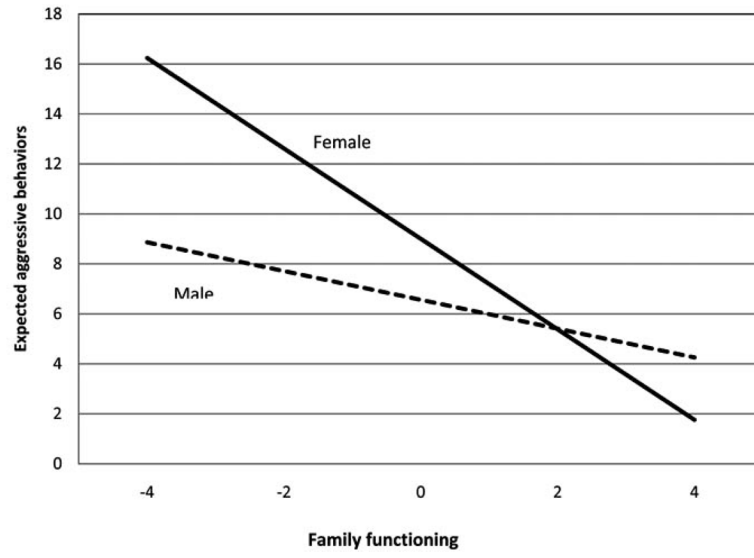
Fig. 1.
The relation between family functioning and aggressive behaviors by gender.
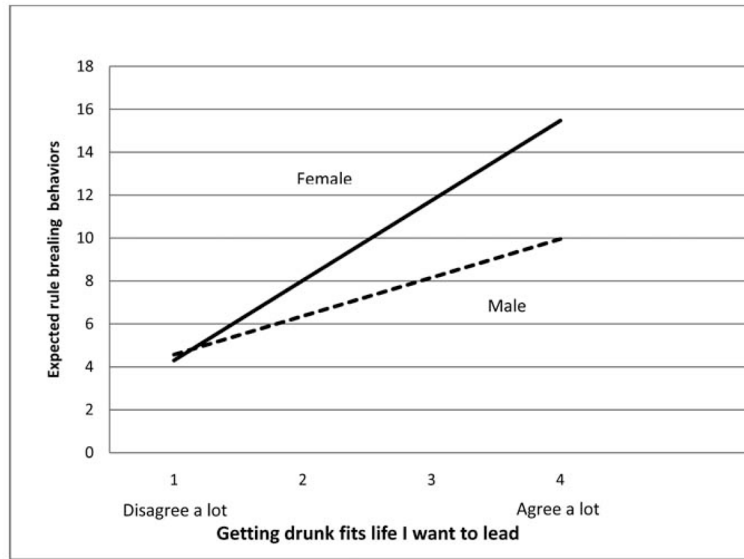
Fig. 2.
The relation between alcohol use attitudes and rule breaking behaviors by gender.

Table 1

Descriptive Statistics of Predictor and Outcome Variables

Variable	Mean or %	Standard Deviation	Minimum	Maximum
Past 90 Day Alcohol Use	32.8%			
Rule Breaking Behavior	6.98	5.47	0	29
Aggressive Behavior	8.56	6.34	0	33
Positive Parenting	17.18	5.54	2	27
Parental Involvement	36.85	7.49	17	52
Peer Monitoring	12.62	4.73	5	26
Parent-Adolescent Communication	64.53	14.25	24	100
Family Communication	7.80	2.17	3	12
Peer Alcohol Use	57.8%			
School Bonding	19.67	5.59	8	32
Alcohol Attitudes	1.58	.80	1	4

Table 2

Effects of Individual, Family, Peer and School Factors on Past 90 Day Alcohol Use, Rule Breaking and Aggressive Behaviors

	Alcohol Use in the Past 90 Days				Rule Breaking Behaviors				Aggressive Behaviors			
	Model				Model				Model			
	1	2	3	4	1	2	3	4	1	2	3	4
Family Functioning	-0.24*	-0.22	-0.15	-0.09	-1.41*	-1.28*	-0.99*	-0.77*	-1.76*	-1.59*	-1.24*	-1.08*
Peer Alcohol Use		2.21*	2.16*	2.02*		3.07*	2.85*	2.05*		2.67*	2.39*	1.87*
School Bonding			-0.05	-0.04			-0.19*	-0.16			-0.23*	-0.21*
Alcohol Attitudes				0.59*				2.32*				1.52*

Note: Alcohol use: Model X^2=106.9, df=43, p<0.001.

Rule breaking behaviors: Model X^2=94.8, df=43, p<0.001, R^2=0.30.

Aggressive behaviors: Model X^2=92.6, df=43, p<0.001, R^2=0.25.

*
p<0.05.

All models adjusted for adolescent's age, gender, nativity status, and family income.

Table 3

Moderating Effects of Gender on Rule Breaking and Aggressive Behaviors

	Rule Breaking Behaviors		Aggressive Behaviors	
	Boys	Girls	Boys	Girls
Family Functioning	−0.78[*]	−0.78[*]	−0.57	−1.76[*]
Peer Alcohol Use	1.88[*]	1.88[*]	2.06[*]	2.06[*]
School Bonding	−0.16[*]	−0.16[*]	−0.23[*]	−0.23[*]
Alcohol Attitudes	1.79[*]	3.74[*]	1.51[*]	1.51[*]

Note: Some path coefficients were constrained to be equal across gender because no significant interactions by gender were found.

[*] $p < 0.05$.

All models adjusted for adolescent's age, nativity status, and family income.