RESEARCH ARTICLE

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Parental Alcohol Drinking Habit as a Predictor of Alcohol Use among Secondary School Students in Barbados

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Abstract

Background: In Barbados and the wider Caribbean region, alcohol is widely consumed by adolescents and young people, including those in secondary schools. The high prevalence of alcohol use, and its potential adverse effects are a source of concern to policy makers and the general population, which calls for better understanding of the drivers of this problem. This study thus aimed at investigating whether parental alcohol drinking habit is a predictor of alcohol use among secondary school students in the country. **Methods:** The predictor variables and response variables in the study were categorical, and so descriptive, univariate analysis consisted of computation of frequencies and percentages. Bivariate analysis using Pearson's Chi Square was done to test for significant differences in the response variables among groups. Logistic regression modeling was used in multivariate analysis to determine the predictor variables that were significantly associated with the response variables. **Results:** Significant associations were seen between students' age, (P= 0.00), grade (P=0.00), fathers' drinking habit (P=0.00), mothers' drinking habit (P=0.00), and both past year and past month alcohol use, in bivariate analysis. Logit model shows that students whose fathers drink only on weekends, sometimes during the week, or every day, respectively, had significantly increased risk of alcohol use in the past month (AOR= 2.62, 95%CI= 1.81- 3.77; AOR= 1.85, 95%CI= 1.19- 2.85; AOR= 2.18, 95%CI= 1.49- 3.18). Students whose mothers drink only on special occasion had significantly higher risk of alcohol use in the past year and past month (AOR= 1.99, 95%CI= 1.06- 3.74; AOR= 2.30, 95%CI= 1.36- 3.89 respectively). **Conclusion:** Having fathers who drink only on weekend, sometimes during the week and every day were significantly positively associated with alcohol use in the past month. Having mothers who drink only on special occasion was a risk factor for past year and past month alcohol use. However, having mothers who drink every day was, counterintuitively, significantly inversely associated with alcohol use in past year and past month.

Keywords: Parental drinking habits- parental alcohol use- adolescents' alcohol use- students' alcohol use- Barbados

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Introduction

Adolescents tend to engage in risky behaviors including experimentation with alcohol and other substances due to the physiological, social and psychological changes they are undergoing at this stage of life (WHO, 2001). Alcohol use among adolescents is associated with numerous social problems, such as violent behavior, self-inflicted harm, unintended harm, accidents as well as pre-disposing young people to use and abuse of other drugs (Johnson et al., 2009; Zaleski et al., 2010; Kirby and Barry, 2012; Substance Abuse and Mental Health Services Administration [SAMHSA], 2015 a; Fuller, 2015). Alcohol use among adolescents is also associated with medical problems including cancers, heart attacks and liver problems (WHO, 2009; Schutze et al., 2011; Ferrari et al., 2014; WHO, 2014; Office for National Statistics, 2017).

Parental drinking habits have been associated with adolescents' drinking behavior (Poelen et al., 2007). Other researchers have also found positive associations between adolescents' perception of parental drinking and adolescents' alcohol use. Evidence suggests that strong family bonds were negatively associated with adolescents' alcohol use (Kuendig and Kuntsche, 2006).

In the Caribbean, prevalence of alcohol use among adolescents is high (PAHO, 2007a; PAHO, 2007b). In Barbados, young people start drinking alcohol at

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a very young age (OAS/CICAD, 2010; Barbados Children Directory [BCD], 2013). Adolescents start drinking as early as 10 years (Fayombo, 2011). Adolescents can be introduced to alcohol by parents or other adults and close family members (BCD, 2013). It is common for children to be given alcohol as medication for a cold, worms or sleep (BCD, 2013). In many Caribbean nations, including Barbados, alcohol use is deeply imbedded within the culture. This may contribute to the tendency of introducing children to alcohol at an early age (Reid, 2015). Young people also tend to view alcohol/ other drugs as a "rite of passage" (Ministry of Family, Culture, Sports and Youth [MFCSY] 2011).

Although younger adolescents are less likely to drink alcohol compared to older adolescents (Zucco et al., 2017), young people who start drinking at an early age are more likely to continue drinking in their adulthood and to develop alcohol use disorders later on (Grant and Dawson, 1997; Windle, 2003). Other factors associated with parental drinking and alcohol use among adolescents include gender, type of school and amount of time a parent spends with children. Male adolescents are more likely to use alcohol than females (Reda et al., 2012; Nolen-Hoeksema, 2004). Public school students have been found to be more likely to use alcohol compared to those in private schools. High prevalence of alcohol use has been reported among students who did not have a supportive relationship with their parents (Soldera et al., 2004), in contrast, supportive mother-adolescent relationship has been shown to reduce levels of substance use (Branstetter et al., 2011).

Although some work has been done in the Caribbean regarding substance use among adolescents, (OAS/CICAD, 2010; Fayombo, 2011; Atkinson, 2012; Atkinson et al., 2015), there is limited research on the influence of parental drinking habits on alcohol consumption among adolescents and youth in Barbados. These studies did not focus on parental drinking habit on alcohol use. This current study, therefore, aimed at determining whether parental drinking habits were associated with students' alcohol use in the past year and past month.

Materials and Methods

Data from the National Secondary Schools Survey 2013, Barbados, were analyzed. The data were collected from a nationally representative sample of students selected from 15 public and 3 private secondary schools using a stratified, two-stage random sampling technique. The survey was carried out by the National Council on Substance Abuse (NCSA) in collaboration with the Inter-American Drug Abuse Control Commission (CICAD).

Independent Variables

The main predictor variables were fathers' and mothers' drinking habits. These were assessed with the question: "Which of the following best describes your father's and mother's or guardian's drinking habits regarding alcohol? (e.g. wine, beer, magnum, Smirnoff ice, hard liquor). Select only one response for father/ guardian and one response for mother/ guardian". The response options were: 1 = never drinks any alcohol; 2= only on special occasions; 3= only on weekends, but never during the week; 4 sometimes during the week; 5= drinks alcohol every day; 6= not applicable, I have no living father/ mother/ guardian, or I never see them.

The covariates (and their response options) were: age (continuous variable), gender (1= male, 2= females), grade (1= 8th grade, 2= 10th grade, 3= 11th grade, 4= 12th grade), and type of school (1= public, 2= private), days the students had meals with their parents/ guardians at the same table (1= never, 2= one single day, 3= two days, 4= three days, 5= four days, 6= five days, 7= six days, 8= every day. The researchers carried out two variable

Table 1. Social Demographic Factors Associated with Parental Drinking Habit in Barbados, 2013. N = 8,538

Characteristics	Frequency	Percentage
Age		
11- 14 years	3,288	38.5
15- 16 years	3,292	38.6
≥17 years	1,455	17
Gender		
Male	3,413	40
Female	4,801	56.2
Type of School		
Public	8,492	99.5
Private	45	0.5
Grade		
8th	2,005	23.5
10th	2,517	29.5
11th	2,548	29.8
12th	1,468	17.2
Father's drinking habit		
Never drinks	1,225	14.3
Only special occasion	2,753	32.2
Only weekend	613	7.2
Sometimes during the week	1,482	17.4
Every day	551	6.5
N/A- no father	360	4.2
Mother's drinking habit		
Never drinks	2,104	24.6
Only special occasion	4,131	48.4
Only weekend	291	3.4
Sometimes during the week	491	5.7
Every day	81	0.9
N/A- no mother	113	1.3
Days student has meals with parent		
Zero (never)	2,368	27.7
1 - 3 days	1,756	20.6
4 - 6 days	833	9.8
Daily	502	5.9

N, number; N/A, not applicable

transformations, namely, age and days students had meals with parents. Age was transformed into a categorical variable, and coded as follows: 1= 11- 14 years, 2= 15- 16 years, 3= 17 years/ older. Days students had meals with parents was re-coded as follows: 1= 0 (zero) day (formerly response option 1), 2= 1-3 days (formerly response options 2- 4), 3= 4-6 days (formerly response options 5- 7), 4= every day (formerly response option 8).

Dependent Variables

The two dependent variables were past year and past month alcohol consumption. These were assessed respectively as follows: (a) "Have you drunk any alcoholic beverages over the past 12 months? (b) "Have you drunk alcoholic beverages over the past 30 days? The response options were the same for the two questions (variables): 1= yes, 2= no.

Results

Majority of students were between 15 -16 years, 3292 (38.6%). Males constituted 40.0 % (3413), public schools (99.5%), and 10th and 11th graders (29.5% and 29.8% respectively). Two thousand seven hundred and fifty-five (32.2%) and 4131 (48.4%) of students had fathers and mothers who drank alcohol only on special occasion, 2368 (27.7%) indicated that they never had meals with their parents (Table 1).

Bivariate analysis shows that there were significant associations between students age (P= 0.00), gender (P= 0.00), grade (0.00), fathers' drinking habit (P= 0.00), mothers' drinking habit (P= 0.00), days

Table 2. Association between Parental Drinking Habit, Socio-Demographic Factors and Alcohol Use among Secondary School Students in Barbados, 2013

Variable	Past Year, n (%)	X^2 (P Value)	Past Month, n (%)	X^2 (P Value)
Age				
11- 14 years	1,218 (58.7)	360.1 (0.00)	639 (33.9)	240.7 (0.00
15- 16 years	2,251 (80.0)		1,360 (51.9)	
17 / Older	1,117 (83.2)		753 (60.2)	
Gender				
Male	1,812 (68.6)	46.6(0.00)	1,165 (48.3)	0.90 (0.34)
Female	2,819 (76.4)		1,621 (47.0)	
Type of school				
Public	4,633 (73.1)	0.45 (0.49)	2,789(47.5)	0.08 (0.77)
Private	21 (67.7)		13 (44.8)	
Grade				
8th	490 (46.5)	594.0 (0.00)	240 (24.4)	317.4 (0.00)
10th	1,249 (69.1)		715 (44.6)	
11th	1,755 (80.1)		1,124 (53.6)	
12th	1,159 (87.2)		723 (59.6)	
Fathers' drinking habit				
Never drinks	494 (60.8)	200.3 (0.00)	278 (36.3)	339.4 (0.00)
Only special occasion	1,522 (72.0)		736 (39.6)	
Only weekend	364 (74.1)		223 (50.8)	
Sometimes during the week	1,030 (85.7)		613 (52.3)	
Every day	388 (86.0)		354 (77.5)	
N/A- no father	240 (72.3)		209 (74.1)	
Mothers' drinking habit				
Never drinks	878 (60.9)	278.3 (0.00)	461 (35.6)	208.4 (0.00)
Only special occasion	2,613 (77.7)		1,520 (49.3)	
Only weekend	172 (78.5)		100 (50.5)	
Sometimes during the week	397 (95.2)		294 (72.2)	
Every day	62 (100)		51 (82.3)	
N/A- no mother	81 (75.7)		56 (53.4)	
Days students had meals with parents				
Zero (never)	1,559 (76.5)	32.8 (0.00)	1,025 (53.5)	40.6 (0.00)
1 - 3 days	1,021 (74.8)		547 (42.5)	
4 - 6 days	474 (71.9)		300(53.2)	
Daily	356 (86.6)		204 (50.5)	

n, number; N/A, not applicable; %, percentage; X^2, Pearson's Chi square

Table 3. Logistic Regression Analysis of Factors Associated with Alcohol Use among Secondary School Students in Barbados, 2013

Variable	Past Year		Past Month	
	AOR	95% CI	AOR	95% CI
Age				
15- 16 years	0.48	0.35- 0.65	2.14	1.48 - 3.10
≥ 17 years	0.41	0.26- 0.64	1.42	1.11 - 1.82
11 – 14 years	1		1	
Gender				
Female	1.38	1.14 - 1.65	0.68	0.57 - 0.80
Male	1		1	
Type of School				
Private	0.79	0.25 - 2.14	0.91	0.33 - 2.55
Public	1		1	
Grade				
10th	3.01	1.85 - 4.89	2.93	1.84 - 4.67
11th	2.12	1.44 - 3.13	1.05	0.77 - 1.44
12th	1.85	1.35 - 2.54	0.85	0.66 - 1.10
8th	1		1	
Fathers' drinking habit				
Only on special occasion	1.03	0.69 - 1.56	2.56	1.70 - 3.84
Only on weekend	0.87	0.60 - 1.26	2.62	1.81 - 3.77
Sometimes during the week	0.19	0.11 - 0.32	1.85	1.19- 2.85
Every day	0.53	0.35 - 0.79	2.18	1.49 - 3.18
N/A- no father	0.53	0.32 - 0.86	0.59	0.38 - 0.92
Never drinks	1		1	
Mothers' drinking habit				
Only on special occasion	1.99	1.06 - 3.74	2.3	1.36 - 3.84
Only on weekend	1.01	0.54 - 1.87	1.39	0.83 - 2.30
Sometimes during the week	1.01	0.45 - 2.23	1.76	0.93 - 3.36
Every day	0.25	0.11 - 0.56	0.5	0.28 - 0.89
N/A- no mother			0.31	0.12 - 0.75
Never drinks	1		1	
Days students had meals with parents				
1 – 3 days	1.28	1.04 - 1.58	1.85	1.54 - 2.22
4 – 6 days	2.02	1.57 - 2.61	1.02	0.81 - 1.29
Daily	0.47	0.31 - 0.71	0.97	0.74 - 1.28
Zero (never)	1		1	

AOR, adjusted odds ratio; N/A, not applicable; CI, confidence interval, 1, reference

students had meals with parents (P= 0.00) and past year alcohol use. Type of school (P=0.49) had no significant relationship with past year alcohol use (Table 2). Significant associations were found between students' age (P= 0.00), grade (P= 0.00), fathers' drinking habit (P= 0.00), mothers' drinking habit (P= 0.00), and past month alcohol use (Table 2).

In multivariate logistic regression, students whose fathers drink only on weekend, sometimes during the week and every day respectively, had significantly increased risk of alcohol use in the past month compared to students whose fathers never drink (AOR= 2.62, 95%CI= 1.81- 3.77; AOR= 1.85, 95% CI= 1.19- 2.85; AOR= 2.18, 95% CI= 1.49- 3.18). However, having no father was inversely associated with alcohol use over past year and past month (AOR= 0.53, 95% CI= 0.32- 0.86; AOR= 0.59, 95% CI= 0.38 – 0.92). Students whose mothers drink only on special occasion had 1.99 and 2.30 times, respectively, the odds of past year and past month alcohol use compared to students whose mothers never drink (AOR= 1.99, 95% CI= 1.06 – 3.74; AOR= 2.30, 95%CI= 1.36- 3.89 respectively). In contrast, having a mother who drinks every day was associated with significantly lower odds of alcohol use in the past year and past month (AOR= 0.25, 95%CI= 0.11- 0.56; AOR= 0.50, 95%CI= 0.28 – 0.89 respectively).

Being 15-16 years and ≥ 17 years were significantly positively associated with past month alcohol use (AOR=

2.14, 95%CI= 1.48- 3.10; AOR= 1.42, 95%CI= 1.11- 1.82 respectively). Being female was inversely associated with past month alcohol use (AOR= 0.68, 95%CI= 0.57- 0.80). Students' grade was positively associated with past year alcohol use. In contrast, only being in 10th grade was significantly positively associated with past month alcohol use. Having meals with parents '1- 3 days' and '4- 6 days' were positively associated with past year alcohol use, while having meals with parents '1- 3 days' was positively associated with past month alcohol use (Table 3).

Discussion

Findings in this study reveal that alcohol use among females and males did not differ significantly among past month (current) users, in bivariate analysis. The plausible explanation for this may be social-cultural. In societies where alcohol drinking is deeply entrenched within the culture, it may be difficult to find significant gender differences in alcohol use. In many Caribbean nations alcohol use is entrenched within the culture and this may contribute to introducing children to alcohol irrespective of gender (OAS/CICAD, 2010; MFCSY, 2011; Fayombo, 2011; BCD, 2013; Reid, 2015). This finding differs from that of Reda et al., (2012) who found gender differences in alcohol use among adolescents.

The findings of this study in the logit model show that having fathers who drink only on weekends, sometimes during the week, or every day were risk factors for alcohol use in the past year. However, having no father was a protective factor for a students' current alcohol use. The reason is not clear, but may be related to students who have no fathers lacking enough money to meet their more basic needs and to spend on alcohol. Having a mother who drinks only on special occasion was a risk factor for alcohol use in the past year and past month. In contrast, having a mother who drinks every day was a protective factor against alcohol use in past year and past month. These findings suggest that students may choose not use alcohol if they perceive that the risks and consequences of alcohol on their parents are destructive and that the students themselves may not wish to experience similar consequences (Johnson et al., 2009; Zaleski et al., 2010; Kirby and Barry, 2012; SAMHSA, 2015 a; Fuller, 2015).

Being 15-16 years and ≥ 17 years were risk factors for past month alcohol use. Being a female was associated with higher risk of past year alcohol use (chronic use) but lower risk of past month alcohol use (current use). Having meals with parents '1- 3 days' and '4-6 days' were risk factors for past year alcohol use, while having meals with parents '1- 3 days' was a risk factor for past month alcohol use. Students who indicated that they had meals with parents daily were less likely to use alcohol in the past year compared to students who never had meals with parents. It appears that having meals with parents may strengthen family bonds and offer an opportunity for parents to discuss dangers of alcohol use with children (BCD, 2013). This finding also agrees with earlier studies by Kuendig and Kunsche (2006) and Branstetter et al., (2011) who reported that strong family bonds were negatively associated with adolescents' alcohol use.

In conclusion, having fathers who drink only on weekend, sometimes during the week and every day was a risk factor for alcohol use in the past month. Having no father was a protective factor against past year and past month alcohol use. Having mothers who drink only on special occasion was a risk factor for past year and past month alcohol use. However, having mothers who drink every day was a protective factor against alcohol use in past year and past month.

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This study was not funded by any organization. The authors declare no conflict of interest.

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