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Association between alcohol advertising and beer drinking among adolescents

ABSTRACT

OBJECTIVE: To analyze the association between alcohol advertising and beer drinking among adolescents.

METHODS: A total of 1,115 students enrolled in the 7th and 8th grades of three public schools in São Bernardo do Campo, Southeastern Brazil, were interviewed in 2006. The independent variables were as follows: attention paid to alcohol advertisements, belief in the veracity of advertisements, affective response to advertisements and previous tobacco use, among others. The dependent variable was beer drinking in the last 30 days. Univariate and multiple logistic regression analyses were made. Age, importance given to religion and the presence of a bathroom in the home were used as control.

RESULTS: Beer drinking in the last 30 days was associated with tobacco use (OR = 4.551), having a favorite alcoholic beverage brand (OR = 5.150), poor parental supervision (OR = 2.139), considering parties one goes to as similar to those seen in commercials (OR = 1.712), paying more attention to advertisements (OR = 1.563) and believing that advertisements tell the truth (OR = 2.122). This association remained, even in the presence of other variables associated with beer drinking.

CONCLUSIONS: Alcohol advertisements are positively associated with recent beer drinking, because they remind adolescents of their own reality or make them believe in their veracity. Alcohol advertisement restrictions can be one way to prevent alcohol use and abuse by adolescents.

DESCRIPTORS: Adolescent Behavior. Alcohol Drinking. Propaganda. Health Knowledge, Attitudes, Practice.

INTRODUCTION

The onset of alcohol use is influenced by individual and interpersonal factors, including family, biological, behavioral and environmental aspects,^{12,15,16,19} among which alcohol advertising is found.^{2,12,19,20,21,26}

Studies indicate that advertising influences alcohol drinking among adolescents.^{6,16,19,a} Although extensive research on alcohol advertising has not been conducted in Brazil, this debate began in the world more than 20 years ago.¹ There are two main types of studies on this theme: econometric ones and consumers' ones.

^a National Institute from Alcohol Abuse and Alcoholism. 10th special report to the U.S. Congress on alcohol and health: highlights from current research from the Secretary of Health and Human Services. Washington, DC: US Department of Health and Human Services; 2000. Prevention research; chapter 7, p.373-426. [Cited 2011 Feb 28]. Available from: <http://pubs.niaaa.nih.gov/publications/10report/intro.pdf>

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Econometric studies usually analyze spending on advertisements (used to evaluate exposure and response) and total consumption (used to evaluate alcohol-related harms). Spending on advertisements was also compared to problems associated with alcohol beverages, such as motor vehicle accidents and clinical problems resulting from chronic alcohol use.^{1,a} Snyder et al²⁶ showed that American adolescents living in areas with higher spending on advertisements drink greater amounts of alcoholic beverages, including those aged more than 20 years. Nonetheless, econometric studies have flaws, such as the lack of distinction between adults and adolescents.¹⁸

Consumers' studies are those that "use an individual as a unit of analysis",¹ i.e., they analyze and predict adolescents' responses to alcohol advertisements. Analyses are based on exposure to advertisements, affective response and influence on adolescents' expectations towards alcoholic beverages.^{3,12,13,16,26}

Certain authors, such as Austin & Mieli,⁵ Ellickson et al,¹² Collins et al,^{10,11} Grube & Waiters¹⁸ and Fleming et al,¹⁶ explore the responses of those exposed to advertisements as predictors of current and future alcohol use. Other authors, such as Stacy et al²⁶ and Snyder et al,²⁵ analyze exposure with a quantitative approach, based on the assumed hours of exposure.

Studies on this theme that have been published were conducted in developed countries, whose alcoholic beverage markets are relatively stable. Brazil is a market with great potential for growth, due to its growing economy and large population (with a high proportion of adolescents).^b The majority of Brazilian adolescents do not drink alcoholic beverages regularly,^{24,c} and the habits and living conditions of the population of Brazil are different from those of the countries studied. Original studies must be conducted in the Brazilian culture to evaluate the possibility of comparing this reality with data from other locations.

In Brazil, there are not many restrictions to alcohol advertising, apart from the few alcohol prevention programs existing. This country adopted the self-regulatory model of the Conselho de Auto-Regulamentação Publicitária (CONAR – Self-regulatory Marketing Council),^d and the rules are mainly related to content and exposure of minors to such advertisements. Considering the efficacy of this questionable self-regulation,¹⁵ the Brazilian government attempted to restrict beer advertisements on television in 2008,

through the Agência Nacional de Vigilância Sanitária (ANVISA – National Health Surveillance Agency) and the Ministry of Health. However, movements led by beer companies and associations representative of means of communication managed to revert these proposals, so that there is currently no time restriction to advertisements of these beverages.

This article aimed to analyze the association between alcohol advertising and beer drinking among adolescents.

METHODS

This study is part of a longitudinal study conducted with 1,132 students enrolled in the 7th and 8th grades of three public schools situated near downtown São Bernardo do Campo, Southeastern Brazil, between 2006 and 2007. São Bernardo do Campo has approximately 660,400 inhabitants, with demographic characteristics similar to those of the majority of urban centers in Brazil, in terms of age, household income and level of education (IBGE 2000).^b Inside the public school system, the socioeconomic pattern of students is homogeneous.

The schools selected included 34 seventh and eighth grade classes, with 33 students per class on average. The choice for interviewing students in these grades resulted from the 2004 National Survey of the Centro Brasileiro de Informações sobre Drogas Psicotrópicas (CEBRID – Brazilian Center of Psychotropic Drug Information),^c according to which the beginning of alcohol drinking in Brazil occurs at the mean age of 12.5 years.

Students previously received an informative pamphlet on the study with the coordinator's contact, so that adults responsible for these students could consent to their participation or not. There were no refusals and all students present on the application day were interviewed using confidential questionnaires, which were completed these students themselves. Interviews were conducted in two periods: between August and November 2006 and between August and November 2007. This article refers to the results of the first period.

The questionnaire was about aspects such as parental monitoring,¹⁷ previous tobacco use, and the importance of religion in one's life, among other things. The instrument was mostly based on the questionnaire developed by Collins et al (2005),¹¹ in addition to Stacy et al (2004)²⁶ and Austin et al (1994).³ A total of three focus

^b Instituto Brasileiro de Geografia e Estatística. Censo 2000: IBGE cidades @. Rio de Janeiro; s.d. [Cited 2011 Mar 8]. Available from: <http://www.ibge.gov.br/cidadesat/topwindow.htm?1>

^c Universidade Federal de São Paulo, Centro Brasileiro de Informações sobre Drogas Psicotrópicas. 5^o Levantamento sobre drogas psicotrópicas entre estudantes do ensino fundamental e médio da rede pública de ensino nas 27 capitais brasileiras – 2004. São Paulo: CEBRID; 2004. [Cited 2011 Feb 28]. Available from: <http://www.unifesp.br/dpsicobio/cebrid/index.php>

^d Conselho Nacional de Autorregulamentação Publicitária. Códigos e anexos: anexo A - bebidas alcoólicas. São Paulo; s.d. [Cited 2011 Feb 28]. Available from: http://www.conar.org.br/html/codigos/codigos%20e%20anexos_cap2_anexoA.htm.

groups were conducted with public and private school students to guarantee the understanding of questions by adolescents aged between 12 and 15 years and the questionnaire adequacy to the adolescents' reality.

A total of ten students completed the questionnaire inadequately and, as a result, were not included in the analysis. Other eight questionnaires were excluded, because respondents' ages were out of the usual 7th and 8th grade students' age range (below 11 years or above 16 years). The final number of questionnaires analyzed was 1,115. Losses were insignificant for the purposes of the analyses.

Students were asked about beer drinking throughout life, in the previous year and in the last 30 days, the latter providing the most reliable responses, because there were inconsistencies in responses (for example, a student reported not having drunk beer in the previous year, although mentioning having done so in the last 30 days). The response variable was, therefore, beer drinking in the 30 days prior to the study (yes; no).

The independent variables were sex, age (≥ 14 years; < 14 years), school attended, presence of a bathroom in the house (yes; no), importance of religion (very important; no), having a favorite alcoholic beverage brand (yes; no), believing that commercials tell the truth (true; false), considering parties one goes to as similar to those seen in alcohol commercials (true; false); paying attention to alcohol commercials (yes; no), previous tobacco use (yes; no), and whether parents usually know where their children are, which was used to indicate parental monitoring (yes; sometimes; never). "Having a bathroom in the house" was included, because not having a bathroom in the house in current days is a strong indication of poor housing conditions and, consequently, of economic status.

Age, importance of religion and having a bathroom in the house were statistically different among the three schools analyzed and researchers chose to maintain them as control in the regression model. The remaining independent variables comprised the initial, saturated or complete model whenever they showed a statistical significance of at least 10% ($p < 0.10$) in the univariate analysis, i.e., when individually compared with the response variable. Only those with a significance < 0.05 in the set of variables remained in the final model.

Possible multiplicative interactions were tested, although not significant. The Hosmer-Lemeshow test was performed to evaluate model adequacy. Analyses were made with the SPSS software, version 15.0.

The present study was approved by the Research Ethics Committee of the Universidade Federal de São Paulo (Process 1767/05).

RESULTS

Sex distribution was homogeneous among schools (53.3% of girls) (Table 1). Each school showed one characteristic that distinguished it from the others, in terms of the presence of a bathroom in the house, importance of religion and age. The socioeconomic variable that revealed the greatest difference between schools was the presence of a bathroom in the house.

Sex and school did not remain in the final model, because they were not statistically associated with alcohol drinking in the previous 30 days in the presence of the remaining variables ($p > 0.05$). All remaining independent variables were positively associated with beer drinking in the 30 days prior to questionnaire application (Table 2), even after control for age, importance of religion and presence of a bathroom in the house.

"Parents who know where their children are when they are not together" was an important protective factor: not to know this corresponded to an odds ratio (OR) of 2.139 for beer drinking in the previous month.

Variables directly linked to advertisements were associated with beer drinking in the last 30 days. The belief that alcohol commercials tell the truth showed an association with alcohol drinking (OR = 2.122; $p = 0.000$), as did the perception of similarity between commercials and students' real life, defined as "the parties I go to are similar to those on commercials" (OR = 1.712; $p = 0.009$). Paying attention to commercials showed a higher risk of alcohol drinking (OR = 1.563, $p = 0.028$), although the strongest association was observed with having a favorite alcoholic beverage brand (OR = 5.150; $p = 0.000$).

The Hosmer-Lemeshow test showed a chi-square of 1.835 ($p = 0.934$), confirming model adequacy.

DISCUSSION

This is an original study in Brazil that shows the association between alcohol advertisements and beer drinking among primary school students, who have not reached the minimum legal age of 18 years for drinking. This association occurs according to at least four aspects: similarity perceived between advertisements and adolescents' lives, attention paid to commercials, belief that commercials tell the truth and having a favorite alcoholic beverage brand. This is observed even when controlling for other aspects that are traditionally associated with alcohol drinking among adolescents, such as age, sex, parental monitoring (protective factor), social class, tobacco use and importance of religion⁵ in the adolescents' lives. With regard to religiousness, a recent Brazilian study affirmed that the fact of an individual being raised in a home where religion is not relevant increases the chance of adopting the standard alcohol drinking habit.⁵

Table 1. Distribution of students according to school and sociodemographic characteristics. São Bernardo do Campo, Southeastern Brazil, 2006.

Variable	School 1 (411)		School 2 (383)		School 3 (321)		Total (N = 1,115)		Chi-square	p
	n	%	n	%	n	%	n	%		
Sex										
Male	192	46.7	180	47.1	148	46.1	520	46.7	0.072	0.964
Female	219	53.3	202	52.9	173	53.9	594	53.3		
Did not respond	0		1							
Age (in years)										
11, 12, 13	372	91.2	333	87.2	250	78.4	955	86.1	25.101	0.000
14, 15, 16	36	8.8	49	12.8	69	21.6	154	13.9		
Did not respond	3		1		2					
Is religion important to you?										
Yes, very much	209	51.0	227	59.4	163	51.1	599	53.9	7.111	0.029
Others	201	49.0	155	40.6	156	48.9	512	46.1		
Did not respond	1		1		2					
Is there a bathroom in your house?										
Yes	356	89.4	356	95.4	295	93.4	1007	92.6	10.48	0.005
No	42	10.6	17	4.6	21	6.6	80	7.4		
Did not respond	13		10		5		28			

Results of the present study are compatible with those of other studies that associate advertising awareness and propensity to drink. Collins et al (2005) stated that attention paid to commercials is the most relevant predictive factor of advertising awareness⁹ and of alcohol drinking in boys.⁸

The belief that alcohol commercials tell the truth can be associated with adolescents' perception of similarity between situations in their lives and those that appear in alcohol commercials. If adolescents believe this, commercials can be seen as sources to define their ideas about "normal drinking habits", which leads to the importance of debating the content to which they are exposed.³ The ability to distinguish what one sees in commercials and real situations can be developed with alcohol use prevention programs, by educating

adolescents about the media. Loyalty to a particular brand (having a favorite alcoholic beverage brand) associated with increased beer drinking contradicts the alcoholic beverage industry's allegation that messages emphasizing this loyalty do not have an impact on consumption.⁶ Studies indicate that loyalty to a brand *per se* indicates consumption, including on larger scales.^{6,15} This loyalty, according to the alcoholic beverage industry, the goal of its advertisements, can be the result of excessive exposure to this media.

Certain attitudes can be taken to reduce the influence of beer advertisements on adolescent consumption. One of them, part of a theory developed by Conar, is to control the content of advertisements, which must be limited to the adult universe and should not enable one to perceive the similarity between advertisements

Table 2. Association between advertisements and beer drinking in the last 30 days among adolescents. São Bernardo do Campo, Southeastern Brazil, 2006. (n = 1,115)

Variable	B	S.E.	Wald	df	p	OR (95%CI)
Parents do not know where their children are	0.760	0.182	17.412	1	0	2.139 (1.497;3.058)
Do you have a favorite alcoholic beverage brand?	1.639	0.219	56.168	1	0	5.150 (3.355;7.906)
Have you smoked cigarettes?	1.515	0.218	48.462	1	0	4.551 (2.970;6.973)
Do you pay attention to alcoholic beverage commercials on TV?	0.447	0.204	4.801	1	0.028	1.563 (1.048;2.330)
Alcoholic beverage commercials tell the truth.	0.753	0.191	15.523	1	0.000	2.122 (1.460;3.086)
The parties I go to are similar to the ones on alcoholic beverage commercials.	0.538	0.205	6.887	1	0.009	1.712 (1.146;2.559)
Constant	-2.954	0.206	205.789	1	0	0.043

B = Beta, SE = systematic error, DF = degrees of freedom; p = significance; OR = odds ratio

and real life situations of the majority of adolescents. Adolescents' perceptions of the similarity between beer advertisements and their lives, found in the present study, suggest that self-regulatory rules are not efficient to protect the most vulnerable population in Brazil. Violation of self-regulatory marketing codes for alcohol advertisements was also detected in Australian, American and Italian studies.^{2,7,12,23,26,e}

Studies suggest that the most efficient way to control the influence of advertisements on alcohol drinking would be the reduction of exposure of those who are younger, restricting the number of alcohol advertisements, including beer, on television and other means of communication.²⁷ Currently, there are no restrictions to beer advertisements in Brazil.

While legal measures are not taken in this sense, society can reduce this influence by focusing on those who receive the messages (adolescents) and educating them about the media.^f Advertisements would stop being a reference point for what is "normal" or "real" and would begin to be seen by adolescents as tools used to influence them towards the consumption of alcoholic beverages, foods and clothes, among others.

Education about the media aims to understand the way advertisements shape adolescents' view of their environment. The objective is to make those who receive messages – the adolescents – develop a detached and

critical view, which enables them to make judgments and make their own decisions.^f Education about the media has been studied with other health issues, such as eating habits and sexual behavior.^{11,14} Activities provided by schools and aimed at these questions could open space for debate and guidance.

Limitations to this study include: the fact that the sample comes from one city exclusively, the impossibility of measuring the actual strength of association and the cross-sectional nature of the investigation, whose methodology does not allow for the establishment of a relation of causality, although it points out the directions to be followed by future studies. The results of the present study indicate ways through which advertisements can influence adolescents' consumption and what can be done to prevent this, once they are consistent with previous studies and the association is plausible.²²

The responsibility for the development, codification and internalization of the messages transmitted by the media falls on both the one who sends the message and the other who receives it. Certainly, the media is not the direct cause of alcohol drinking. However, there is an association between the messages conveyed by the media and adolescents' behavior. Part of the so-called "social responsibility" of advertisement in general and of the alcohol industry in particular, which cannot be neglected, resides in this conversion from idea to social practice.

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