

Tobacco and Alcohol Consumption among Adolescents¹

Maria Margarida da Silva Reis dos Santos Ferreira²

Maria Constança Leite de Freitas Paúl Reis Torgal³

This study analyzes the consumption of alcohol and tobacco among high-school adolescents in the district of Porto, Portugal. The results reveal the following: the majority of respondents do not smoke; smoking starts earlier in the case of girls; smoking increases with age; peer pressure is an important factor influencing smoking; about half of adolescents consume alcohol; boys drink more than girls; the number of those who consume alcohol increases with age; distilled drinks are the choice for both genders; 44.1% of the respondents became intoxicated at least once and the majority has no intention to quit drinking.

Descriptors: Adolescent; Risk-Taking; Tobacco; Alcohol Drinking; Nurse's Role.

¹ Paper extracted from Doctoral Dissertation "Estilos de vida na adolescência: de necessidades em saúde à intervenção de enfermagem" presented to Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Porto, Portugal.

² RN, Ph.D. in Nursing Sciences, Adjunct Professor, Escola Superior de Enfermagem do Porto, Porto, Portugal. E-mail: mrs@esenf.pt.

³ Psychologist, Ph.D. in Biomedicine, Professor, Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Porto, Portugal. E-mail: constancapaul@netcabo.pt.

Corresponding Author:

Maria Margarida da Silva Reis dos Santos Ferreira
Escola Superior de Enfermagem do Porto
Rua António Bernardino de Almeida
CP: 4200-072 Porto, Portugal
E-mail: mrs@esenf.pt

Consumo de tabaco e de álcool na adolescência

O estudo Consumo de tabaco e de álcool na adolescência teve como objetivos principais analisar hábitos de consumo de tabaco e os hábitos de consumo de álcool dos adolescentes do ensino secundário, do distrito do Porto, Portugal. Os resultados evidenciam, em relação ao consumo de tabaco, que a maioria dos inquiridos não fuma, o hábito inicia-se mais cedo nas raparigas e aumenta com a idade, os amigos exercem influência para o início do consumo e, em relação ao consumo de álcool, há evidencia de que cerca da metade dos adolescentes consome bebidas alcoólicas, os rapazes têm mais o hábito de beber, o número de consumidores aumenta com a idade, as bebidas destiladas são as preferidas de ambos os géneros, 44,1% dos inquiridos já se embriagaram pelo menos uma vez e a maioria não pretende deixar de beber.

Descritores: Adolescente; Assunção de Riscos; Tabaco; Consumo de Bebidas Alcoólicas; Papel do Profissional de Enfermagem.

Consumo de tabaco y alcohol en la adolescencia

El estudio Consumo de tabaco y de alcohol en la adolescencia tuvo como objetivos principales analizar los hábitos de consumo de tabaco y los hábitos de consumo de alcohol de los adolescentes de la enseñanza secundaria, del distrito del Porto, en Portugal. Los resultados evidencian, en relación al consumo de tabaco, que la mayoría de los encuestados no fuma, el hábito se inicia más temprano en las muchachas y aumenta con la edad, los amigos ejercen influencia para el inicio del consumo y, en relación al consumo de alcohol, hay evidencia de que cerca de la mitad de los adolescentes consume bebidas alcohólicas, los muchachos tienen más el hábito de beber, el número de consumidores aumenta con la edad, las bebidas destiladas son las preferidas de ambos géneros, 44,1% de los encuestados ya se embriagaron por lo menos una vez y la mayoría no pretende dejar de beber.

Descriptores: Adolescente; Asunción de Riesgos; Tabaco; Consumo de Bebidas Alcohólicas; Rol de la Enfermera.

Introduction

Adolescence is a transitional period in which adolescents develop their abilities experimenting with new types of behaviors and face the challenge of adopting healthy behavior⁽¹⁾. Healthy behaviors acquired during adolescence tend to prevail in adult life. Likewise, behaviors that represent a risk to health and that are acquired during childhood or adolescence are often difficult to eradicate in adult life and can have an impact on health, in the short and/or long run. Tobacco and alcohol consumption are among risk behaviors⁽¹⁾.

Tobacco is generally the first drug consumed by children and adolescents⁽²⁾. Smoking usually starts in adolescence⁽³⁾ and few people start smoking after 18 years of age⁽²⁻³⁾. Smoking significantly increases

in adolescents who have other risk behaviors such as the consumption of illegal drugs and alcohol⁽²⁾. Having friends, parents and siblings that smoke is positively associated with adolescents' smoking⁽²⁾.

Alcohol is the most used psychoactive substance among adolescents⁽⁴⁾. Despite the fact that its consumption is illegal during adolescence, it still is an important problem in the public health sphere because it is the highest risk factor posed to the health of this group⁽⁵⁾. Compared to people of other age ranges who also drink alcohol, adolescents present a higher tendency to engage in binge drinking (consumption of several drinks in a single occasion: five or more for boys and four or more for girls) and are also more exposed to traffic accidents and unprotected sex.

Adolescents generally begin their experiences with drugs that are considered legal, such as alcohol and tobacco, in familiar environments⁽⁶⁾. Peer pressure is highly predictive of consumption.

Scientific studies addressing the consumption of alcohol and tobacco by adolescents are considered a priority by the health sector due to the direct and indirect association these behaviors have with some of the main causes of morbidity and mortality during adolescence⁽⁷⁾, as well as to the need for scientifically sound evidence for the development of policies on health education, health promotion and the development of programs and interventions focused on adolescents.

From this perspective, this study analyzes the smoking and drinking habits of adolescents attending high school, the age in which smoking and drinking begins, and analyzes the participants' motivations to keep drinking. The relation of demographic variables, gender, age and school grade with smoking and drinking was investigated.

Method

This is a descriptive, exploratory and cross-sectional study in which data were collected through a questionnaire composed of 45 closed, open and mixed questions developed for the study's objective and which was approved by the National Commission for Data Protection. The instrument pretest was carried out in several schools in the district of Porto, Portugal with 30 high school students.

Data collection occurred between June and November 2005 in classrooms during the school year after the Regional Directorate of Education of the North and Executive Councils of the Schools authorized the study. All students from the classes selected by the schools' principals participated in the study, who, after the study's objective was clarified and its voluntary and anonymous character was ensured, freely consented to participate. The following exclusion criteria were considered: refusal to participate in the study, older than 19 years old, absence of relevant information in the questionnaire (gender and date-of-birth), questionnaires with many blanks or containing absurd responses.

The Statistical Package for Social Sciences (SPSS) version 16 was used for the statistical analysis of the data. Data were explored through descriptive statistics, specifically central tendency and dispersion measures and inferential statistics. The content analysis technique, more specifically thematic analysis, was used to treat the information obtained through the questionnaire's open questions.

Sample characterization

The study sample originated from five public schools in the district of Porto and is comprised of 680 adolescents attending high school. Of these, 238 (35%) were attending the 10th grade, 280 (41.2%) the 11th grade and 162 (23.8%) the 12th grade. Most of the participants were female (59.6%, n=405, vs. 40.4%, n=275 male), Portuguese students were predominant (98.5%, n=669), whereas the other students were Venezuelan (0.4%, n=3), Brazilian (0.3%, n=2), Swiss (0.3%, n=2), Congolese (0.3%, n=2) and French (0.1%, n=1). The age range varied from 15 to 19 years and the average age was 16.61 years (SD=1.03). Girls were on average 16.55 years old (DP=0.98) and boys, 16.69 years old (DP=1.10).

According to the common characteristics of adolescents of a given age, adolescence is often divided into three phases: initial, from 10 to 13 years of age, intermediate from 14 to 16 and final from 17 to 19 years of age. This division was also adopted in this study for the purposes of inferential statistics. The majority of adolescents, regardless of gender, fit into the ages ranging from 17 to 19 years (50.6%, n=205 girls and 54.2%, n=149 boys).

Results

Of the adolescents participating in the study, 13.4% (n=91) smoked. The percentage of boys smoking was higher than that of girls (15.3%, n=42, vs. 12.1%, n=49). The onset age varied from nine (2.2%, n=2) to 19 years of age (1.1%, n=2); an average of 13.67 years old (DP=1.76), 47.2% (n=43) started smoking before the age of 14 years and only 4.4% (n=4) started smoking after 16 years of age.

The quantity of cigarettes adolescents smoked per day varied between two (6.7%, n=6) and 25 (1.1%, n=1), 8.15 on average (SD=5.30). The majority of adolescents stated they wish to quit smoking (83.1%, n=74) and limit the number of cigarettes smoked per day (85.6%, n=77). Regarding the smoking habits of friends and family members with whom they lived, 35.7% (n=235) reported having friends smoking and 48.2% (n=325) reported that family members with whom they lived smoked.

Boys and girls did not significantly differ in relation to smoking habits ($\chi^2=1.42$, $p=0.23$). The youngest adolescents (group from 14 to 16 years of age) differed from the oldest ones (group from the 17 to 19 years of age) in relation to smoking ($\chi^2=12.41$, $p=0.000$),

whereas the percentage of smokers was higher among the oldest participants (17.8%, $n=63$, vs. 8.6%, $n=28$, youngest). There is no statistical association between school grade and smoking habits ($\chi^2=3,76$, $p=0.15$).

Female and male adolescents significantly differ in terms of onset smoking age ($U=756.00$, $p=0.027$), in that girls started smoking earlier. The minimum age by which adolescents started smoking was nine years for girls and ten for boys. The oldest age girls started smoking was 16 years, while for boys it was 19 years of age; the average age for girls was 13.27 years ($SD=1.51$) and was 14.14 years for boys ($SD=1.92$).

The analysis concerning the number of cigarettes smoked daily by adolescents taking into account gender revealed that there were no significant differences ($U=902.50$, $p=0.52$) between boys and girls. The same is true in relation to age ($U=819.50$, $p=0.76$) and school grade ($KW=0.05$, $p=0.98$).

Having smoking friends is associated with adolescents' smoking ($\chi^2=80.35$, $p=0.000$). The largest percentage of smokers (29.8%, $n=70$, vs. 4.7%, $n=20$ adolescents who smoke and whose majority of friends do not) is in the group in which the majority of friends smoke. We also concluded that having smoking family members with whom they lived is associated with adolescents' smoking habits ($\chi^2=10.15$, $p=0.001$). This is the group in which we find the highest percentage of smoking adolescents (17.8%, $n=58$, vs. 9.5%, $n=33$ of participants who smoke and whose family members, with whom they live, do not smoke).

Regarding the consumption of alcohol, 42.6% of the participants (49.8%, $n=137$, boys vs. 37.8%, $n=153$ girls) reported drinking. The majority (73.5%, $n=194$) started drinking between 14 and 16 years of age. The minimum onset age was 8 years of age and the maximum was 18 years of age, the average was 14.50 years ($SD=1.64$). The female minimum onset age was 10 years of age and for males was 8 years. The maximum onset age was 18 years for both genders and the average was 14.89 years ($SD=1.68$) for girls and 14.50 years ($SD=1.60$) for boys.

The most common drinks consumed among students, regardless of gender, are the distilled ones. The places where the participants reported drinking more frequently were: public places (discos, cafes, restaurants and pubs, 68.8%), at home and public places (24.1%) and at home (7.1%). Friends are the most common company for alcohol consumption (75.8%, $n=216$) whereas 16.4%, $n=47$, drink with family members or friends, 6%, $n=17$, drink with family members and

1.8%, $n=5$, drink with some other category of person or alone.

There is a significant difference between genders regarding drinking habits ($\chi^2=9.71$, $p=0.002$). The percentage of boys who drink is higher (49.8%, $n=137$, vs. 37.8%, $n=153$ girls). Boys and girls do not differ in terms of onset age ($U=8678.00$, $p=0.99$). The youngest and oldest adolescents significantly differ in terms of drinking habits ($\chi^2=7.83$, $p=0.005$), whereas the highest percentage of drinkers is in the group comprised of individuals from 17 to 19 years of age (47.7%, $n=169$, vs. 37.1%, $n=121$ from the 14 to 16 years of age group). School grade is associated with drinking ($\chi^2=20.60$, $p=0.000$): the group attending the 12th grade has the highest percentage of drinkers.

The majority of participants reported their friends do not drink alcohol (54.9%, $n=363$), however, the conclusion is that having friends who drink is associated with alcohol consumption ($\chi^2=1.07$, $p=0.000$). The percentage of participants who drink and whose friends also drink is higher than that of those participants who drink but whose friends do not (65.1%, $n=194$, vs. 25.1%, $n=91$, respectively). Alcohol consumption by family members did not present a significant relationship to adolescents' alcohol consumption ($\chi^2=0.30$, $p=0.59$).

At least one case of being intoxicated was reported by 44.1% ($n=126$) of adolescents who drink (40%, $n=60$ girls and 48.5%, $n=66$ boys). There were no significant differences between genders concerning having already become intoxicated ($\chi^2=2.11$, $p=0.15$). The percentage of older participants who had already become intoxicated is significantly higher than younger ones ($\chi^2=8.41$, $p=0.004$).

Most of the adolescents (92.3%, $n=252$) did not wish to stop drinking and were asked to justify their response. Since it was an open question, we proceeded with content analysis, which generated seven categories: "I like drinking" (18.5%), "I drink only occasionally" (18%), "I do not think drinking is bad for you" (13.3%), "drinking helps me relax and be happy" (2.1%), "I do not think I have to quit because only I drink a little" (19.4%), "because I am not addicted/dependent" (15%) and "because I do not reach my limit of remaining sober" (13.7%).

Girls significantly differ from boys concerning the wish to stop drinking ($\chi^2=4.85$, $p=0.028$); male adolescents are those who most manifest this intention (11.4%, $n=15$, vs. 4.3%, $n=6$ girls). The conclusion is the youngest and the oldest adolescents do not differ in their intention to stop drinking ($\chi^2=1.13$, $p=0.29$).

Neither is there any association between school grade and the desire to stop drinking ($\chi^2=0.26$, $p=0.99$). A significant relation between having friends who drink and the desire to quit drinking was found ($\chi^2=7.38$, $p=0.007$), whereas, the group of adolescents who drink and report that the majority of their friends do not drink has the highest percentage of participants intending to quit (14.5%, $n=12$, vs. 4.8%, $n=9$ drinkers who have friends who also drink).

There is an association between smoking and drinking ($\chi^2=53.75$, $p=0.000$); the largest percentage of drinkers is in the group of smokers. There is also a very statistically significant relation between sexual life onset and alcohol consumption among adolescents ($\chi^2=36.96$, $p=0.000$). The group of participants who drink has the highest percentage of adolescents who are already sexually active.

Discussion

Adolescence is a time for exploration, making discoveries and choices. The options adolescents choose concerning the consumption of substances might have severe implications on their social and health lives.

Smoking generally begins during adolescence and has increased in all countries, especially among girls⁽⁸⁾. Although differences between genders concerning smoking habits were not found in this study, the percentage of smoking boys is higher than that of girls. The respondents started smoking on average at 13.67 years of age. The findings of this study are similar to those of other authors⁽⁹⁻¹¹⁾, who concluded that the majority of adolescents do not smoke and that there are no significant differences between genders in relation to smoking⁽¹⁰⁾. In relation to the average onset smoking age, the results of this study agree with those of other studies⁽¹⁰⁾, in which the initial phase of adolescence is when many addicts start smoking. There is a significant difference between the youngest and the oldest adolescents in relation to smoking habits; the percentage of smokers is higher among the oldest, which coincides with the findings of other studies⁽¹⁰⁻¹¹⁾.

Smoking puts adolescents' health at risk. Apparently, the respondents are sensitive to this problem because the majority wishes to quit smoking and limit tobacco consumption. Other researchers⁽⁹⁾ report that the majority of adolescents wish to quit smoking regardless of smoking daily or not.

Girls started smoking significantly earlier than boys. There is no consensus among researchers in relation to

this information, which is very much associated with the respondents' country of origin. The World Health Organization (WHO)⁽³⁾ reports that boys tend to begin smoking earlier than girls. Other studies⁽¹⁰⁻¹¹⁾, like this one, found that girls started smoking significantly earlier than boys.

Living in environments where people smoke, such as, having smoking family members or friends, has been identified as leading to a higher risk of becoming addicted. This study verified that having smoking friends is associated with becoming a smoker since the group of adolescents in which the majority of friends smoked has the larger percentage of smoking participants. Other studies⁽⁸⁻⁹⁾ also report that peers seem to be an important model for smoking and there is a correlation between having smoker friends and becoming a smoker. The conclusion is that living with smoking relatives is associated with the consumption of tobacco because this group of adolescents has the largest percentage of smoking participants. These findings are in agreement with previous studies⁽⁸⁾ when they state that there is association between smoking parents and siblings and the development of smoking habits during adolescence.

Recent studies show that the consumption of alcohol during adolescence has started increasingly earlier⁽⁴⁾. It has become standard⁽¹²⁾ and many adolescents see themselves as regular consumers⁽¹³⁾. This study evidenced a strikingly high percentage (42.6%) of adolescents who drink and presented significant differences between genders: the girls are those who least report alcohol consumption. These results are similar to those of other researchers^(6,10,13), who also concluded that the percentage of boys who drink is significantly higher than that of girls.

Although there are no differences between boys and girls concerning the drinking onset age, we found that the average onset age is slightly higher in girls. These results differ from those of other authors⁽¹⁰⁾ who concluded that boys start drinking significantly earlier. It is disturbing to verify that 20.6% of the respondents started drinking before the age of 14 years because these are at a higher risk of developing alcohol dependency over their lifetimes than those who wait to start drinking until they become 21 years old⁽¹⁴⁾.

In line with other studies⁽¹⁰⁻¹¹⁾, the conclusion is that distilled drinks are the respondents' preferred drinks regardless of gender, which they preferably consume in public places⁽¹⁵⁾, though they also reported drinking at home. Other researchers^(12,16) report the opposite: a higher percentage of respondents drink at home or at

friends' home and in private parties, whereas a smaller proportion of adolescents drink in public places. Perhaps the fact that the highest percentage of adolescents report drinking in public places is due to a less stringent enforcement of laws that prohibit the sale to and consumption of alcohol by minors in Portugal.

The majority of participants drink with friends. Though they also reported drinking with family members, a small number of adolescents reported they consume alcohol even when they alone. In the face of these results and according to those determined by others⁽¹⁶⁾, we conclude that alcohol is seen as a way to socialize in this phase of life. The fact that some drink even when they are alone might indicate a greater dependency because they drink even when they are not in a social situation.

As expected and according to other studies^(6,13,16), the oldest adolescents are those who most report drinking. Perhaps, some of the reasons explaining the higher incidence of consumers in this final phase of adolescence are greater autonomy, exploration of identity, low parental control and higher involvement with peers. There are significant differences between school grade and drinking: the percentage of consumers increase as adolescents advance through school grades. This result is related to an increased consumption among older adolescents, which suggests the need for a more intense investment focused on this age range emphasizing the harm caused by alcohol consumption.

This study's results concerning the level of alcohol consumption seem to suggest that having friends who drink represents a significant risk factor, not only for consumption but also for continuing to drink. There was a significant association between consumption and having friends who drink and also having friends who drink and the desire to quit drinking, that is, the group of adolescents who drink and report the majority of their friends do not drink, has the highest percentage of participants who wish to quit. These findings are similar to those found by other researchers^(4,13) who report that friends influence adolescents' consumption. As opposed to that reported by other authors⁽¹⁷⁾, this study did not present a significant relationship between having drinking family members and respondents' alcohol consumption.

It is worrying that 44.1% of adolescents who reported drinking also reported having become intoxicated. There are no significant differences between genders concerning the report of intoxication, but boys are those who mostly report this fact. The oldest adolescents are those who most reported intoxication. Significant association was also found between school grade and intoxication.

This study's results corroborate others concerning the absence of statistical association between genders in relation to the occurrence of intoxication⁽⁶⁾ and also to the fact that the oldest adolescents are those who most report having become intoxicated⁽¹⁰⁻¹¹⁾.

As previously stated, adolescents who drink put their health and life at risk in the short and long run, thus it is worrying that 92.3% of adolescents who drink do not wish to quit. It is particularly serious that they do not consider that drinking is harmful to health because these adolescents are at a higher risk of developing abusive behavior since they believe drinking helps to relax and make them happy. These adolescents are more likely to take refuge in drinking whenever more complex problems emerge instead of trying to solve them in a positive way. Other studies⁽¹²⁾ report that one of the reasons indicated by adolescents for keeping drinking is the consideration that "it is not wrong to drink". As have other researchers^(6,8), this study exhibited a significant relation between smoking and alcohol consumption. We also concluded that the group of participants who drink has the highest percentage of adolescents who are already sexually active. Other studies report that the consumption of alcohol might facilitate involvement in sexual relations⁽¹⁶⁾, that is, there is an association between sexual life onset and alcohol consumption⁽¹⁸⁾.

Conclusion

The results obtained suggest the need for further research to investigate adolescents' health and risk behaviors, their occurrence and the factors that influence them. This knowledge is important in the development of health intervention programs, especially as conceived for this group. This study has several implications for preventive actions nurses should take with adolescents. It is important to help/educate adolescents to develop competencies that allow them to resist peer pressure to become involved with behavior that puts their health and well-being at risk. These measures should be developed at school and in the community, the success of which depends on the involvement of peers and parents, given the role they play in behavior modeling.

Finally, the following are some limitations of this study: data collection included only adolescents who are attending school, which can bias the results because secondary school is a non-mandatory part of formal education in which drop out rates increase and some adolescents start working; it included only public schools from the urban area of the district of Porto, Portugal.

References

1. Newman K, Harrison L, Dashiff C, Davies S. Relações entre modelos de pais e comportamentos de risco na saúde do adolescente: uma revisão integrativa da literatura. *Rev Latino-am Enfermagem* [periódico na Internet] 2008 Fev [citado 2008 dezembro 3]; 16(1):142-50. Disponível em: http://www.scielo.br/pdf/rlae/v16n1/pt_21.pdf
2. American Academy of Pediatrics. Committee on substance abuse tobacco's toll: implications for the pediatrician. *Pediatrics* 2001; 107(4):794-8.
3. WHO. The European health report 2005 – Public health action for healthier children and populations. Copenhagen: WHO Regional Office for Europe; 2005. [acesso em 2 dezembro 2006]. Disponível em: <http://www.euro.who.int/document/e87325.pdf>
4. Li F, Barrera M, Hops H, Fisher KJ. The longitudinal influence of peers on the development of alcohol use in late adolescence: A growth mixture analysis. *J Behav Med.* 2002; 25(3):293-315.
5. WHO. Framework for alcohol policy in the WHO European Region. Copenhagen: WHO Regional Office for Europe; 2006.
6. Cardenal CA, Adell MN. Factors associated with problematic alcohol consumption in schoolchildren. *J Adolesc Health* 2000;27(6):425-33.
7. Martínez MR, Pedrão LJ, Alonso CMM, López GKS, Oliva RNN. Auto-estima, auto-eficácia percebida, consumo de tabaco e álcool entre estudantes do ensino fundamental, das áreas urbana e rural, de Monterrey, Nuevo León, México. *Rev Latino-am Enfermagem* [online]. 2008 Mai-Jun [citado 2009 abril 29], 16(spe):614-20. Disponível em: http://www.scielo.br/pdf/rlae/v16nspe/pt_18.pdf
8. Lambert M, Hublet A, Verduyck P, Maes L, Broucke S. Report "Gender differences in smoking in young people". Brussels: Flemish Institute for Health Promotion; 2002. [acesso em 13 Novembro 2006]. Disponível em: http://www.ktl.fi/portal/english/research_people_programs/health_promotion_and_chronic_disease_prevention/projects/enypat/publications/gender_differences_in_smoking_in_young_people/
9. Leatherdale ST. What modifiable factors are associated with cessation intentions among smoking youth? *Addict Behav* 2008; 33(1):217-23.
10. Matos MG. Equipa do Projecto Aventura Social e Saúde. A saúde dos adolescentes portugueses (quatro anos depois). Relatório português do estudo HBSC 2002. Lisboa: FMH; 2003.
11. Currie C, Roberts C, Morgan A, Smith R, Settertobulte W, Samdal O, et al. Young people's health in context – health behaviour in school-aged children (HBSC) study: international report from the 2001/2002 survey. Copenhagen: WHO Regional Office for Europe; 2004.
12. Hayes L, Smart D, Toumbourou J, Sanson A. Parenting influences on adolescent alcohol use. Australian Government: Australian Institute of Family Studies; 2004. [acesso em 11 março 2007]. Disponível em: <http://www.aifs.gov.au/institute/pubs/resreport10/alcohol.html>
13. Scholte RH, Poelen EA, Willemsen G, Boomsma DI, Engels RC. Relative risks of adolescent and young adult alcohol use: The role of drinking fathers, mothers, siblings, and friends. *Addict Behav* 2008; 33:1-14.
14. Brown SA, Tapert SF. Adolescence and the trajectory of alcohol use: Basic to clinical studies. *Ann NY Acad Sci* 2004; 1021:234-44.
15. Coslin P. Les conduites à risque à l'adolescence. Paris: Armand Colin Éditeur; 2003.
16. Institute of Alcohol Studies. Adolescents and alcohol: IAS factsheet; 2007. [acesso em 2 setembro 2007]. Disponível em: <http://www.ias.org.uk/resources/factsheets/adolescents.pdf>
17. Duncan SC, Duncan TE, Strycker LA. Family influences on youth alcohol use: A multiple-sample analysis by ethnicity and gender. *J Ethn Subst Abuse* 2003;2(2):17-33.
18. Parkes A, Wight D, Henderson M, Hart G. Explaining associations between adolescent substance use and condom use. *J Adolesc Health* 2007;40(2):180.e1-180.e18.

Received: Jan. 16th 2009

Accepted: Oct. 13rd 2009