# Use of alcohol, tobacco and other drugs by adolescent students from Porto Velho-RO, Brazil

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## Abstract

*Objective: to study the prevalence of tobacco, alcohol and drug use and associated factors. **Method:** this was a cross-sectional study with adolescents attending state schools in Porto Velho-RO, Brazil; associations were investigated using multivariate Cox regression. Prevalence ratios (PR) and 95% confidence intervals (95%CI) were calculated. **Results:** the prevalence of alcohol, tobacco and other drug consumption was 24.0%, 6.4% and 2.3%, respectively; alcohol use was associated with tobacco use (PR 6.68; 95%CI 3.17;14.10; p=0.00), illicit drug use (PR 4.34; 95%CI 1.28;14.76; p=0.01) and parental alcohol consumption (PR 1.52; 95%CI 1.14;2.02; p=0.00); consumption of tobacco by parents and friends and use of other drugs by friends were associated with the consumption of these substances by the students. **Conclusion:** there is an evident need to involve schools and families in actions directed to preventing the use of these substances among adolescents.*

*Key words: Alcoholic Beverages; Tobacco; Street Drugs; Adolescents; Cross-Sectional Studies.*

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## Introduction

The abuse of licit and illicit drugs is a world concern. Alcohol and tobacco are the drugs that kill the most worldwide.[1] Their frequent use causes social, psychological and biological harms, not to mention the consequences for the users' future lives.[2-4] Adolescents are the most vulnerable age group when it comes to experimentation and abusive drug consumption, and the reasons that lead to the increasing use of such substances are varied and complex. Some factors might be related to the life stages, such as juvenile omnipotence sensation, challenging the family and social structures and the search for new experiences.[4]

> *Adolescents are the most vulnerable age group when it comes to experimentation and abusive drug consumption.*

In Brazil, the Child and Adolescent Statute (ECA)[5] understands as criminal the behavior of those who sell, provide, administer and give alcoholic drinks and other products that can cause physical or psychological addiction to children or adolescents. However, such practices are still under observation. The lack of supervision in the fulfillment of the Law and the permissiveness of families and society are factors that contribute to drugs consumption.[4] As a consequence, Brazilian adolescents present high prevalence on alcohol use, substance of higher life-time consumption (60.5%), and in the 30 days prior to the interview (21.1%), among students.[6] These frequencies may vary according to the methods adopted for measurement, the location where the survey was conducted and the studied population. In other national studies, prevalences of 86.8%[7], 68.9%[8] and 51.0%,[9] to alcoholic beverage consumption were found. Similar results were presented in studies conducted in other countries. In Canada, the use of alcoholic beverage was of 59.1%,[10] and in Spain, 84% of the adolescent students interviewed had already tried one or more types of alcoholic beverages.[11] Specifically in Madrid, the results showed that 85% of the adolescents had already tried alcohol.[12] Such data reflect the magnitude of the problem to global health.

Heavy drinking is one of the responsible factors for the increase of deaths in traffic, mainly among adolescents.[13] The first experimentation usually happens very early in life, below the age of 12.[14] In many cases, the consumption takes place near the family, at home and with friends,[9] in parties, bars and shopping malls.[15] Moreover, the use of psychoactive substances is commonly known to produce a multiplier effect, in which the consumption of a certain substance raises the risk of consumption of other substances.[16]

In Brazil and in many other countries, tobacco use by adolescents is highly prevalent. A national survey revealed a consumption of this substance in the prior 30 days of 5.1% among students.[15] Even this number being particularly lower when compared to other Latin American countries, such as Argentina (25.5%), Uruguay (17.7%) and Peru (17.3%),[17] these results show the need of paying closer attention to this important Public Health issue.

Smokers have higher risks of developing many types of cancer, especially lung cancer, and higher probability of heart diseases, strokes and pulmonary emphysema.[17] The association between a lower educational achievement and the use of tobacco and other drugs is a concern. Social class, education level, school bonds and the occurrence of school failures are more associated to the use of tobacco and illicit drugs, low school performance and low school frequency.[16] Tobacco consumption is more frequent among groups with lower education level.

Schools have experienced a raise in aggressiveness and violence. The abusive use of psychotropic drugs feeds violence and is associated with bullying among boys and girls.[18] Also, adolescents who consume these substances are more aggressive, less interested in studying and more inattentive.[13] On the National Survey on Students' Health (PeNSE),[15] 8.7% of the students reported having already tried some illicit drug.

The course of scientific studies on the problematic alcohol, tobacco and other drugs consumption by adolescents is being prioritized by the Health Sector, due to a direct and indirect association of these behaviors with some of the main causes of morbidity and mortality in adolescence.[19] Likewise important is the conduction of researches which can support the development of educational policies and health promotion, programs and interventions for adolescents.[19] Such need is even higher in the North of Brazil, given the lack of published studies on the problem in the region. In Porto Velho, Rondônia State, little is known about alcohol, tobacco or illicit drugs consumption.

This work aimed at studying the prevalence and associated factors of tobacco, alcohol and other drugs use by eight-grade students of state schools in the city of Porto Velho, Rondônia State (RO), Brazil.

## Methods

This is a cross-sectional study conducted in Porto Velho-RO. This work is part of a greater project, called *Students' Health in the Brazilian Northern Region*, developed in the cities of Porto Velho, Ji-Paraná (Rondônia State, RO) and Santarém (Pará State, PA).

In Porto Velho, the state school system had about 57,107 students aged between 5 and 18 years old, distributed in nine units, located in the urban area. This study target population was composed by eighth-grade students of sate schools in the city of Porto Velho, in 2009 (N=4,667).

To define the sample calculation, the different outcomes prevalences were estimated in 50%, in order to produce the highest number of sample possible; considering 4% as the maximum error and a 95% confidence interval.

To avoid a possible design bias, since a process of sampling by cluster was used, the sample calculation was multiplied by 1.5; 20% was added up to this product, to compensate for eventual losses, totalizing 996 students.

The sampling was conducted by clusters, stratified by units. Initially, the total number of schools and 8th grade classes was identified. With this information, the sample was proportionally distributed according to the number of students enrolled in each one of the units. After that, the 8th grade classes of all schools were numbered for the selection of students. According to the average amount of students by shift (morning or afternoon), 34 classes were randomly chosen. All students of the chosen classes were invited to participate in the study.

The data collection was conducted in the classroom. The students answered to a self-report questionnaire composed by closed questions. After the students were done answering, the questionnaires were collected by the researchers. The instrument adopted was the same used in a study conducted with students from Rio Grande do Sul State, for the project *The Students' Health in the Municipal Schools of Gravataí-RS*, which was based on the Global School-Based Student Health Survey, of the World Health Organization – WHO.[17]

The instrument used to measure the students' economical classification or status came from the Brazilian Association of Survey Companies (ABEP).[20] Due to the lack of class E families and to the small number belonging to classes A and D, the economical status was categorized as A+B and C+D.

The outcomes studied were the consumption of alcohol, tobacco and other drugs in the 30 days prior to the interview. The independent variables were:
a) Demographic
   - Sex (male; female);
   - Age (in years);
   - Self-reported skin color (white; non-white);
   - Economical status (A+B; C+D);
b) Alcohol-related
   - Use of alcohol (yes; no);
   - Use of alcohol in the prior 30 days (yes; no);
   - Age when tried alcohol for the first time (in years);
   - Where was the first time he or she drank (own house; another house; school; bar/restaurant/dance clubs; other places);
   - Frequency of use in the prior 30 days (none; once or twice; 3 to 9 times; ≥10 times);
   - Problems related to the use of alcohol in the prior 30 days (none; once or twice; 3 to 9 times; ≥10 times);
   - Family's reaction if they were drunk (would not notice/would not care; would be upset; does not know);
   - Heavy drinking experience (yes; no);
   - Parental alcohol consumption (no; father; mother; both; does not know); and
   - With whom they usually drink (does not drink; friends; family; alone/other people);
c) Tobacco-related
   - Use of tobacco (yes; no);
   - Use of tobacco in the prior 30 days (yes; no);
   - Age when tried tobacco for the first time (in years);
   - Number of cigarettes smoked in the prior 30 days (<1; 1, 2 to 5; 6 to 10; 11 to 20; >20);
   - Where he or she smokes (does not smoke; at home; at school; at friend's house; parties/bars; parks/shopping malls/on the street; others);
   - Parental tobacco consumption (no, father, mother, both, does not know); and
   - Use of tobacco by friends (no; the majority; a few);

d) Illicit drugs-related

  - Use of drugs (yes; no);

  - Use of drugs in the prior 30 days (yes; no);

  - Age when tried illicit drugs for the first time (in years);

  - First drug used (cannabis; anabolic steroids; amphetamine; cocaine; solvents; ecstasy); and

  - Use of drugs by friends (no, the majority; a few).

For data quality control, the questionnaire answers were double typed on Epi Data software, and there was consistency and coherency analysis. The inconsistencies detected were checked in the original documents.

The associations between the outcomes and the variables of interest were analyzed by using the multivariable Cox regression for cross-sectional studies.[21] The multiple regression was conducted for each one of the outcomes, including the variables of interest, regardless of the level of significance in the univariate analysis, with the associations with $p<0.05$ being considered significant. For the use of tobacco in the prior 30 days, the following variables were included in the model, in one single stage: sex; skin color, economical status; parental tobacco consumption (parents who smoke) and friends tobacco consumption (friends who smoke); and the use of alcohol and drugs in the prior 30 days by the adolescent. For the use of alcohol in the prior 30 days, the following variables were included in the model, simultaneously: sex, skin color, economical status; parental alcohol consumption (parents who drink); use of tobacco and drugs in the prior 30 days by the adolescent. Finally, for the use of other drugs in the prior 30 days, the following variables were included in the model: sex; skin color; economical status; use of drugs by friends; and use of alcohol and tobacco in the prior 30 days by the adolescent.

The study project was approved by the Lutheran University of Brazil Ethics Committee (Protocol No. 2009-251H) and by the Secretariat of Education of Rondônia State. The parents or guardians of each student who took part in the study signed a Term of Consent.

## Results

832 students were interviewed with 16.5% of loss. Among the students who took part in the study, 56.6% were girls and 73.8% self-declared non-white. The interviewees' age varied from 12 to 19 years old:

median of 14 years old; average of 14.34 years old; and standard deviation of 1.01. Class B presented the highest number of students (432: 51.9%), followed by class C (364: 43.7%) (Table1).

With regard to the use of substances in life-time, prevalences were 49.6%, 17.5% and 5.3% for alcohol, tobacco and other drugs, respectively. In the prior 30 days, prevalences were 24.0% for the use of alcohol, 6.2% for tobacco and 2.3% for other drugs. Regarding the use of substances by parents and friends, 59.4% of the students revealed having parents who drink and 26.1%, parents who smoke, 52.0% declared having friends who smoke; 33.2% have friends who use other drugs (Table 1).

Among those who have consumed alcohol any moment in their lives, the first experimentation usually happened at the age of 12 to 13 years old (average of 11.59 years old; standard deviation of 2.31 years old), and 39.3% reported having drunk for the first time at home and 46.7% reported drinking with friends. In the prior 30 days, 50.0% of the students denied having drunk alcohol and 17.7% informed having drunk three or more times in this period (Table 2). 25.4% of the students reported having already drunk excessively at least once in their lives; 24 of them had problems with their parents, fights or school absence in the prior 30 days. Among all the interviewees, 52 of them said their parents would not notice if they got home drunk and 44.5% said they did not know what their parents' reaction would be in this kind of situation.

With regard to tobacco use (Table 3), the average age of experimentation was 11.87 years old (standard deviation: 2.01 years old). Among the 53 students who had smoked in the prior 30 days, 26 smoked less than one cigarette/day, 22 reported smoking mainly in parties and bars, and 11 smoked at school.

The age group in which the highest number of adolescents have tried other drugs was between 13 and 15 years old, with an average of 13.20 (standard deviation: 1.62). Cannabis was the first experimentation drug for 23 of the 44 students who have used it in life-time, followed by anabolic steroids and solvents (Table 4).

After adjusted analysis, the use of alcohol in the prior 30 days (Table 5) was higher among boys (34.0%), those who used other drugs in the prior 30 days (81.0%) and among those who reported having parents who drink (52.0%). Those who have also smoked in the prior month referred a 3.5 times higher alcohol intake.

**Table 1 – Students' distribution (n=832) according to demographic characteristics and use of substances in the city of Porto Velho, Rondônia State. Brazil, 2010**

| Variables | n | % |
|---|---|---|
| **Sex** | | |
| Male | 361 | 43.4 |
| Female | 471 | 56.6 |
| **Age (in years)** | | |
| 12-13 | 140 | 16.8 |
| 14-16 | 665 | 79.9 |
| 17-18 | 27 | 3.3 |
| **Skin Color** | | |
| White | 218 | 26.2 |
| Non-white | 613 | 73.8 |
| **Economical status** | | |
| A+B | 444 | 53.4 |
| C+D | 388 | 46.6 |
| **Use of alcohol** | 413 | 49.6 |
| **Use of alcohol in the prior 30 days** | 198 | 24.0 |
| **Use of tobacco** | 146 | 17.5 |
| **Use of tobacco in the prior 30 days** | 53 | 6.4 |
| **Use of other drugs** | 44 | 5.3 |
| **Use of other drugs in the prior 30 days** | 19 | 2.3 |
| **Parental alcohol consumption** | | |
| No | 316 | 38.0 |
| Father | 195 | 23.4 |
| Mother | 59 | 7.1 |
| Both | 240 | 28.8 |
| Does not know | 22 | 2.6 |
| **Parental tobacco consumption** | | |
| No | 605 | 73.2 |
| Father | 115 | 13.9 |
| Mother | 57 | 6.9 |
| Both | 43 | 5.2 |
| Does not know | 6 | 0.7 |
| **Use of tobacco by friends** | | |
| No | 393 | 48.0 |
| The majority | 116 | 14.2 |
| A few | 309 | 37.8 |
| **Use of other drugs by friends** | | |
| No | 550 | 66.8 |
| The majority | 67 | 8.2 |
| A few | 206 | 25.0 |

**Table 2 – Distribution of students who have consumed alcohol in life-time (n=413) according to related variables in Porto Velho, Rondônia State, Brazil, 2010.**

| Variables | n | % |
|---|---|---|
| **Age when first tried (in years)** | | |
| 2-11 | 156 | 37.8 |
| 12-13 | 188 | 45.5 |
| 14-17 | 69 | 16.7 |
| **Where the first experimentation was [a]** | | |
| At home | 161 | 39.2 |
| Otherhouse | 78 | 19.0 |
| School | 14 | 3.4 |
| At the street/park | 24 | 5.8 |
| Bar/restaurant/dance clubs | 65 | 15.8 |
| Other place | 69 | 16.8 |
| **Frequency of use in the prior 30 days** | | |
| None | 215 | 52.0 |
| 1-2 times | 125 | 30.3 |
| 3-9 times | 40 | 9.7 |
| 10 or more times | 33 | 8.0 |
| **With whom usually drinks** | | |
| Does not drink | 134 | 32.5 |
| Friends | 193 | 46.7 |
| Family | 61 | 14.8 |
| Other people/alone | 25 | 6.0 |

a) n=411; 2 missing observations.

**Table 3 – Distribution of students who have used tobacco in life-time (n=146) according to related variables in Porto Velho, Rondônia State, Brazil, 2010.**

| Variables | n | % |
|---|---|---|
| **Age when first tried (in years)** | | |
| 7-11 | 54 | 37.0 |
| 12-13 | 63 | 43.1 |
| 14-16 | 29 | 19.9 |
| **Number of cigarettes/day in the prior 30 days [a]** | | |
| Did not smoke | 63 | 54.3 |
| Less than 1 | 26 | 22.4 |
| 1cigarette/day | 6 | 5.2 |
| 2-5 cigarettes/day | 16 | 13.8 |
| 6-10 cigarettes/day | 2 | 1.7 |
| 11-20 cigarettes/day | 2 | 1.7 |
| More than 20 | 1 | 0.9 |
| **Where usually smokes** | | |
| Does not smoke | 72 | 49.3 |
| At home | 6 | 4.1 |
| School | 11 | 7.6 |
| Work | 1 | 0.7 |
| Friend's house | 10 | 6.8 |
| Parties/bars | 22 | 15.1 |
| Parks/shopping malls/street | 14 | 9.6 |
| Other | 10 | 6.8 |

a) n=116; 30 missing observations.

**Table 4 – Distribution of students who have used drugs in life-time (except tobacco and alcohol) (n=44) according to related variables in Porto Velho, Rondônia State. Brazil, 2010.**

| Variables | n |
|---|---|
| **Age when first tried (in years)** | |
| 9-12 | 11 |
| 13-15 | 33 |
| **First drug that tried [a]** | |
| Cannabis | 23 |
| Anabolic Steroid | 7 |
| Anphetamine | 2 |
| Cocaine | 3 |
| Solvents | 7 |
| Ecstasy | 1 |

a) n=43; 1 missing observation.

Concerning the use of tobacco in the prior 30 days (Table 5), the adolescents who have drunk in the prior 30 days and the ones whose friends smoke presented prevalences 6.7 and 9.6 times higher than their reference pairs, respectively. The use of other drugs prevalence among those who had drunk in the prior 30 days and among those who have friends who use other drugs were, respectively, 4.3 and 8.7 times higher than their pairs.

## Discussion

The scientific studies on the use of alcohol, tobacco and other drugs have revealed important findings about the situation in Brazil. However, little is known about the problem in some regions, especially in the North of the country. This study, conducted with students from Porto Velho, Rondônia State, pointed out that approximately half of the interviewees have already consumed alcohol in some moment and one fourth of them have used the substance in the prior 30 days. Nonetheless, the prevalence of alcohol consumption in the prior month was lower than those observed in other studies that used the same data collection instrument in countries such as Argentina, Peru and Uruguay, with prevalences of 56.8%, 27.1% and 59.6% respectively.[17]

Boys consumed more alcohol in the prior month than girls. Such finding might be related to various factors, among them, a cultural issue: it is socially more acceptable that men make use of these substances. Even so, a change on this matter may be going on. On the National Survey on Students' Health (PeNSE)[15], conducted with students who consumed alcohol in the prior month, this consumption was higher among girls, but there was no statistical significance; however, among students who have tried alcohol at least once in life, the prevalence was significantly higher among the girls.

The fact that 39.2% of the students in this study have tried alcohol for the first time at home; most of them between 12 and 13 years old and reporting the habit of drinking mainly with friends and family, deserves a closer attention. Adolescence is a period when great importance is given to belonging to groups, which makes the individual more vulnerable to others' influence for risky behaviors.[22] However, the values and the attitudes adopted by the parents, who lead their children education, can offer protection or risk for them, including for alcohol consumption.[18] On the studied group, a non-protective family environment was identified, based on the fact that 44.5% of the students did not know what would be their parents' reaction if they got home drunk.

With regard to the use of tobacco, the results pointed out that 17.5% have already used it, at least once, prevalence lower than the one found in other studies.[11,12,13] The use of tobacco in the prior 30 days (6.4%) was also lower when compared to studies developed in Argentina (25.5%), Uruguay (17.7%) and Peru (17.3%).[17] The use of tobacco was inferior to one cigarette/day (22.0%) or between two and five cigarettes/day (13.8%). These data possibly reflect the anti-tobacco campaigns, broadcasted in the country during the past twenty years, the main responsible for turning smoking into a less sociable tolerated habit. A survey conducted in 2010 with Primary and High School students, enrolled in public and private schools,

**Table 5 – Results of the Cox regression for factors associated to the use of alcohol, tobacco and other drugs in the prior 30 days by students in the city of Porto Velho, Rondônia State . Brazil, 2010**

| Variables | Alcohol (n=746) | | | | Tobacco (n=745) | | | | Other drugs (n=759) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Crude | | Adjusted | | Crude | | Adjusted | | Crude | | Adjusted | |
| | PR[a] (95%CI[b]) | P[c] | PR[a] (95%CI[b]) | P[c] | PR[a] (95%CI[b]) | P[c] | PR[a] (95%CI[b]) | P[c] | PR[a] (95%CI[b]) | P[c] | PR[a] (95%CI[b]) | p |
| **Sex** | | | | | | | | | | | | |
| Male | 1.23 (0.95;1.58) | 0.112 | 1.34 (1.03;1.74) | 0.029 | 0.78 (0.47;1.32) | 0.364 | 0.82 (0.47;1.41) | 0.465 | 0.55 (0.22;1.35) | 0.189 | 0.56 (0.24;1.30) | 0.179 |
| Female | 1.00 | – | 1.00 | – | 1.00 | – | 1.00 | – | 1.00 | – | 1.00 | – |
| **Skin color** | | | | | | | | | | | | |
| White | 1.00 | – | 1.00 | – | 1.00 | – | 1.00 | – | 1.00 | – | 1.00 | – |
| Non-white | 0.89 (0.65;1.20) | 0.427 | 0.98 (0.72;1.32) | 0.879 | 0.48 (0.22;1.06) | 0.068 | 0.53 (0.25;1.12) | 0.095 | 0.56 (0.16;1.93) | 0.360 | 0.69 (0.23;2.10) | 0.519 |
| **Economical status** | | | | | | | | | | | | |
| A+B | 1.00 | – | 1.00 | – | 1.00 | – | 1.00 | – | 1.00 | – | 1.00 | – |
| C+D | 1.03 (0.78;1.36) | 0.846 | 0.91 (0.71;1.16) | 0.441 | 1.45 (0.84;2.50) | 0.184 | 1.52 (0.87;2.66) | 0.140 | 1.58 (0.64;3.92) | 0.328 | 1.60 (0.61;4.23) | 0.339 |
| **Tobacco <30 days** | | | | | | | | | | | | |
| Yes | 4.01 (3.31;4.87) | <0.001 | 3.50 (2.74;4.47) | 0.000 | | | | | 8.54 (3.51;10.80) | <0.001 | 2.18 (0.78;6.08) | 0.136 |
| No | 1.00 | – | 1.00 | – | | | | | 1.00 | – | 1.00 | – |
| **Drugs <30 days** | | | | | | | | | | | | |
| Yes | 3.23 (2.40;4.35) | <0.001 | 1.81 (1.21;2.71) | 0.004 | 6.49 (3.38;12.46) | <0.001 | 1.84 (0.80;4.21) | 0.150 | | | | |
| No | 1.00 | – | 1.00 | – | 1.00 | – | 1.00 | – | | | | |
| **Alcohol <30 days** | | | | | | | | | | | | |
| Yes | | | | | 10.32 (6.81;16.07) | <0.001 | 6.68 (3.17;14.10) | <0.001 | 8.87 (3.23;20.32) | <0.001 | 4.34 (1.28;14.76) | 0.019 |
| No | | | | | 1.00 | – | 1.00 | – | 1.00 | – | 1.00 | – |
| **Parents who drink** | | | | | | | | | | | | |
| Yes | 1.67 (1.26;2.22) | <0.001 | 1.52 (1.14;2.02) | 0.004 | | | | | | | | |
| No | 1.00 | – | 1.00 | – | | | | | | | | |
| **Parents who smoke** | | | | | | | | | | | | |
| Yes | | | | | 1.25 (0.71;2.21) | 0.438 | 1.10 (0.62;1.97) | 0.742 | | | | |
| No | | | | | 1.00 | – | 1.00 | – | | | | |
| **Friends who smoke** | | | | | | | | | | | | |
| Yes | | | | | 15.14 (4.75;18.20) | <0.001 | 9.61 (2.16;12.69) | 0.003 | | | | |
| No | | | | | 1.00 | – | 1.00 | – | | | | |
| **Friends who use drugs** | | | | | | | | | | | | |
| Yes | | | | | | | | | 17.12 (3.98;13.65) | | 8.75 (1.98;18.64) | 0.004 |
| No | | | | | | | | | 1.00 | – | 1.00 | – |

a) PR: prevalence ratio
b) 95%CI: 95% confidence interval
c) Significance level of **z** test

from the 27 Brazilian state capitals, showed a significant decrease on tobacco consumption when comparing to the data from a study conducted in 2004.[6]

In most cases, tobacco experimentation happened at a very young age (between 12 and 13 years old), corroborating with other national[3,24] and international[10,25] studies outcomes. The consume – identified in lower proportions in their own houses – took place mainly in parties and bars, with school being the third in this ranking. The use of tobacco was significantly associated with the fact that the student has smoker friends, which is similar to findings of other studies.[9,25,26] In this case, the results found might also be related to a change of social conception towards tobacco, especially in the family environment. Nevertheless, the weight of peer groups influence in adopting a behavior should be considered here, since it is a characteristic of adolescence, whence the importance of preventive actions for adolescents, especially at school.

The use of other drugs was reported by 5.3% of the students, a considerably low prevalence. According to PeNSE,[15] the prevalence of illicit drugs experimentation varied from 5.3% in Macapá, Amapá State to 14.2% in Curitiba, Paraná State. According to this study, the use of these drugs in the prior 30 days was reported by 2.28% of the interviewees. Recovering data from the 2010 survey, conducted with Primary and High School students, from private and public schools of the 27 Brazilian state capitals,[6] the use was found to be 5.5% in the prior month. It is possible that Porto Velho adolescents use fewer drugs than those who live in other cities, although many factors might explain this result, for instance, methodological differences: in the survey conducted in the 27 Brazilian state capitals, students from Primary and High Schools were included, whereas only students enrolled in the 8th grade of primary school took part in the Porto Velho study. If the age profiles of both studies were similar, the results would probably be closer, considering the increase trend in drug consumption as people get older.[6] Another possibility is that the outcomes here presented are the result of educational actions and public policies which have been implemented lately.

Cannabis was the first experimentation drug, similarly to other studies.[8,9] The lower price and the easy access may explain this preference, when comparing to the other illicit substances. In the media, the discussions

and the distinct opinions on the possible harms caused by cannabis, its legalization and even its therapeutic use may be transmitting to adolescents the idea that this is a harmless substance.

It is also important to take into consideration the similar experimentation age for alcohol, tobacco and other drugs: 12-13 years old to alcohol and tobacco, and 13-15 years old to other drugs. These findings corroborate with other studies.[9,10,15,22] The early involvement with this kind of substance, even if in an experimental way, may be harmful to cognitive and physiological development, making them more likely to be influenced by friends in their involvement in high risk behaviors.[22] The use of alcohol has also shown significant association with the use of tobacco and other drugs. In fact, the use psychoactive substances usually produces a multiplying effect, in which the consume increases the probability of using other drugs.[16]

It is important to highlight that the use of substances by friends has been associated to the use of tobacco and other drugs, but not to the use of alcohol. The latter has been associated only to the use by their parents. Families are responsible for their children. It is in a family environment that experiences are built and shared, where the first rules and values associated to social interaction are taught. In many families, alcohol is not seen as a health risk factor, but as a cultural and assembling element. On the other hand, tobacco and other drugs are less sociable acceptable, turning its use – part of an adolescent experience – into a challenging behavior to social rules. However, studies have shown that the lack of limits and/or authority, the failure to comply rules, the need for affection, comprehension and family support may undermine adolescents, favoring harmful influences of friends and the adoption of risk behaviors to health.[4,22,24] A positive family attitude is important in order to change unhealthy habits and avoid adolescents to be negatively influenced by friends and acquaintances. Therefore, the results presented, show how important is the family and school involvement in programs related to the prevention of the use of tobacco, alcohol and other drugs, mainly among adolescents.

Yet, the data collected must be carefully handled due to the inherent limitation of cross-sectional studies and to the fact that the group studied is exclusively composed by eighth-grade students of Porto Velho state schools.

Students enrolled in municipal and private schools did not take part in the survey. Another limitation is that prevalences of substances use are usually underestimated when non acceptable social behaviors are investigated, although the self-report questionnaire might reduce the impact of this bias.

The information obtained in this study is relevant and point to the need of developing and implementing policies that promote the research on this issue, mainly in the North of the country. The information might also be used to support actions of the School Health Program (PSE)[28], which is a national policy implemented in 2007 and aims to join the Health and Education areas for developing actions that promote a healthier school population.

The school is seen as a changing agent. When it is incapable of developing this role, associated to the lack of a well-structured family and to the easy access to alcohol, tobacco and other harmful drugs, it results in a set of factors which can lead the student to the use of such substances.

Each adult, family member, Health or Educational professional, community representative have an important role on orientating adolescents, offering them the opportunity of knowing, contributing to make them qualified and capable of handling their lives with quality.

## Authors' Contributions

Elicker E, Palazzo LS, Alves GG and Câmara S, contributed to the conception and design of the study, critical review and approval of the manuscript final version.

Aerts DRGC contributed to the conception and design of the study, critical review and approval of the manuscript final version.

All of the authors approved the final version of the manuscript and are responsible for all of the aspects of the work, including the guarantee of its accuracy and integrity.

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