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Prevalence and factors associated with illicit drug use throughout life: National School Health Survey 2015

Prevalência e condições associadas ao uso de drogas ilícitas na vida: Pesquisa Nacional de Saúde do Escolar 2015

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ABSTRACT: *Introduction:* The use of illicit drugs is a public health concern. This paper describes the prevalence and factors associated with the use of illicit drugs throughout life among 9th grade students attending public and private schools in daylight period in Brazil. *Method:* Data from the Brazilian Adolescent School-based Health Survey (PeNSE) were analyzed. Use of illicit drugs at some point in life was assessed considering marijuana, cocaine, crack, solvent-based glue, ether-based inhalants, ecstasy, and oxy. Data were analized descriptively and by the Poisson's regression model. *Results:* The use of illicit drugs at least once in life was reported by 9,0% of participants, being more prevalent among girls and associated with alcohol or tobacco use, active sexual life, feeling of loneliness, little or no contact between school and parents, and the experience of familial aggressions. The outcome was inversely associated with close contact with parents and their supervision. Prevalence was higher among participants whose mothers had higher educational levels and had, who had a payed job, and who attended public schools. *Discussion:* The prevalence of lifetime use of illicit drugs was stable when the three PeNSE samples were compared, but it resulted more common among girls in 2015 for the first time and was associated with the same conditions found in prior studies. *Conclusion:* Family and school appear to be protective factors, especially when there is direct supervision and care. It is important that both girls and boys are given the same attention when it comes to this this subject.

Keywords: Illicit drugs. Schools. Prevalence. Adolescent. Surveys. Behavior.

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RESUMO: *Introdução:* O uso de substâncias ilícitas é uma preocupação em saúde pública. O estudo descreve sua prevalência entre estudantes do nono ano do turno diurno de escolas públicas e privadas do Brasil, identificando fatores associados. *Método:* Foram analisados dados da Pesquisa Nacional de Saúde do Escolar (PeNSE) de 2015. A experimentação de drogas ilícitas (maconha, cocaína, crack, cola, loló, lança perfume, ecstasy ou oxy) alguma vez na vida foi avaliada. Os dados foram submetidos à análise descritiva e regressão de Poisson para estimativa de razões de prevalência brutas e ajustadas. *Resultados:* O uso na vida de drogas ilícitas foi relatado por 9,0% dos escolares, foi mais prevalente entre as meninas e relacionado ao uso de álcool e tabaco, à atividade sexual e também à percepção de solidão, pouco vínculo/responsabilização entre escola e pais e vivências de agressões no ambiente familiar. O desfecho esteve inversamente associado ao contato próximo e à supervisão dos pais. O desfecho também foi mais prevalente entre escolares com maior escolaridade materna e inserção no mercado de trabalho e entre jovens de escolas públicas. *Discussão:* A prevalência do uso na vida de drogas ilícitas mantém-se estável entre as edições da PeNSE, mas em 2015 o comportamento predominou entre as meninas, ainda associado às mesmas condições de estudos anteriores. *Conclusão:* Família e escola se expressam de modo protetor, especialmente quando há supervisão e cuidados diretos. É preciso estar igualmente atento a meninas e meninos com relação a esse tema.

Palavras-chave: Drogas ilícitas. Escolas. Prevalência. Adolescente. Inquéritos. Comportamento.

INTRODUCTION

Childhood and adolescence are critical phases when it comes to one's development[1]. Numerous changes and challenges faced in this period make individuals vulnerable to environmental influences, which partly explains the greater exposure to risky behaviors such as the use of psychoactive substances[2]. Over the decades, the consumption of psychoactive substances became a public health problem because of the associated set of damages[3]. Drug use is related to contextual factors that include, in this age group, school and family mainly. Stressful events, drug use by adults, and violence in family environment increase the chances of one's consuming it at an early age[4]. The problem worsens in peripheral communities, where social exclusion[5] is more evident and known to be related to higher risk of drug use and early participation in activities such as drug dealing.

The characteristics of substances known to be "illicit" vary from one to another, and in some countries, marijuana is no longer illicit, but estimating its use still seems useful for the purpose of comparing findings. In Brazil, the market of these substances is an unregulated system of production, supply, and distribution that operates in the margins of the law and takes its characters, including users, to almost total invisibility to the eyes of public policies.

Children and adolescents from lower income countries or with worse social inclusion profiles, where health risks are higher[6], represent a group that deserves attention adjusted to their particularities[7]. The matter of illicit substance use among children and adolescents takes one a wide dimension in a broader health care scenario in different countries, and many interventionist actions aimed at reducing it have been described[8-10].

Schools tend to be prioritized by both illicit drug market players and authorities and volunteers interested in promoting preventive programs and actions[11]. Children and adolescents gather in this environment during school days for most of the day. There is great opportunity for exchanges and relationship networks are established. This setting leads to experimentation and discovery. Several studies have already investigated the prevalence and conditions associated with illicit drug use among school children in Brazil. Carlini et al.[12] stated that 25.5% of students reported lifetime use of a substance other than alcohol or tobacco. The Brazilian Adolescent School-based Health Survey (PeNSE) 2012 reported prevalence of 7.3%[13]. The differences between estimates can be attributed to different age ranges in both samples.

Knowing the extent to which such behaviors occur in Brazilian schools and what they are associated with can help in the qualification of health care when it comes to this particular subject. This study estimates the prevalence of illicit drug use and detects conditions associated with this behavior among students enrolled in the ninth grade of primary education in Brazilian public and private schools.

METHOD

This study intends to analyze data from PeNSE 2015, a cross-sectional survey conducted by the Brazilian Institute of Geography and Statistics (IBGE) and Ministry of Health, by interviewing schoolchildren in the ninth grade of public and private schools of Brazil. The sample is representative of Brazil, State capitals and 27 federated units and includes 102,301 schoolchildren, of 4,159 classes, enrolled in 3,040 schools in 2015.

The sample was designed to estimate population parameters (proportions or prevalence) in several geographic areas, with selection following three stages: in the first stage, the municipalities and/or groups of municipalities were selected (primary sampling unit); in the second stage, the schools were selected (secondary sampling unit); in the third stage, the classes were selected (tertiary sampling unit), and these students formed the sample in each stratum[14].

Schools with fewer than 15 students in the ninth year and in night period classes (less than 3% of the total number of students) were excluded from the sample selection. In the schools visited, all students enrolled in the ninth grade were interviewed by means of an electronic questionnaire, in an autonomous manner. Students answered an individual questionnaire on a smartphone under the supervision of trained researchers. They were informed about the research, about their free participation and that, according to research ethics norms, they could withdraw from it in case they felt uncomfortable answering the questions. The study was approved by the Research Ethics Board of the Ministry of Health (CONEP/MS). Further information on this research methodology can be found at http://www.ibge.gov.br/home/estatistica/populacao/pense/2015/.

In 2015, the study PeNSE had its scope expanded by including a sub-sample with students from the sixth year of elementary school through the third year of high school. However, for the purposes of the present study, the analysis was performed with students of the ninth grade, with the justification of preserving comparability between the 2009 and the 2012 edition, and also because it is the biggest sample of schoolchildren in the ninth year and therefore representing the country, federation units and State capitals, while the sub-sample had a more restricted representativeness[14].

The dichotomous variable obtained by the yes/no responses to the following question was investigated: "Have you ever tried any drugs, including: marijuana, cocaine, crack cocaine, cola, 'loló' or 'lança-perfume'[(1)], ecstasy, oxy?"

To analyze factors associated with illicit drug use throughout life, a hierarchical model with six levels was used[15]. At the first level, the variables included were gender, race/ethnicity, mother's educational level, school network (public, private) and living with father and/or mother. In the second level, age and insertion of interviewees in the labor market were included. At the third level, the variables frequency of meals with parents/caregiver or head of the family, how often parents knew what students do in their free time, how often the parents check that participants did their homework, and number of episodes of familial aggression in the past 30 days. Level four included number of days participants missed school without parental permission in the last 30 days, and reports of being victim of bullying. Level five addressed participants' self-perception as "lonely" in the last 12 months, difficulty sleeping in the last 12 months, and number of close friends. Level six included tobacco and alcohol use at some point in life and in the last 30 days, number of sexual partners in life, and frequency (in days) of at least one hour of physical activity in the past week.

Data analysis was performed in the statistical package STATA, version 12.2. Adjusted analyses were performed with Poisson regression to estimate prevalence ratios (PR). The inclusion of variables in the model respected the hierarchical model previously described. The variables from the first level were adjusted for each other only, while level 2 variables were adjusted for other variables in the same level and for the next levels'; level 3 variables were adjusted for variables in the same level plus next levels', and so on, for levels 4, 5 and 6. All analyses were preceded by design effect control, taking into account the effect of conglomerates (schools) to calculate variance. A sample weighting factor was used to correct the over- and underrepresentation of schoolchildren groups and some schools, due to specificities of the sample process[14].

RESULTS

The use of illicit drugs at some point in life was reported by 101,760 students. The prevalence of use of these substances at least once among Brazilian schoolchildren was 9.0%

[(1)]A drug containing ethyl chloride, plus a scent, that gives users an euphoric, short-lived rush.

(95%CI 8.5–9.5). In State capitals, consumption was higher (10.4%) compared to other municipalities (8.6%, p < 0.001). This rate of use was higher in urban-area schools (9.4%, p < 0.001) and in schools from the south (12.6%), mid-west (10.8%) and southeast (10.6%) regions (Figure 1).

The prevalence of illicit drug use in life was lower among male schoolchildren enrolled in private schools and living with parents. These associations were found even after controlling for the other variables in the same hierarchical level. Even in adjusted analysis, higher educational level of mothers was also associated with higher probability the outcome under analysis (Table 1).

Table 2 shows that use of illicit drugs in life is more likely to be reported by students who have a paid work, and even after controlling for confounding factors, the prevalence in this group remained 72% higher (95%CI 1.56–1,89) than in the reference group (no paid work). Age was directly associated with lifetime risk of drug use, with students aged 16 to 19 years presenting a 3.14-fold higher risk (95%CI 2.55–3.86). With regard to family cohesion, individuals who rarely had their meals accompanied by family members presented higher risk of consumption (OR = 1.26; 95%CI 1.13–1.40). In addition, use rate tended to
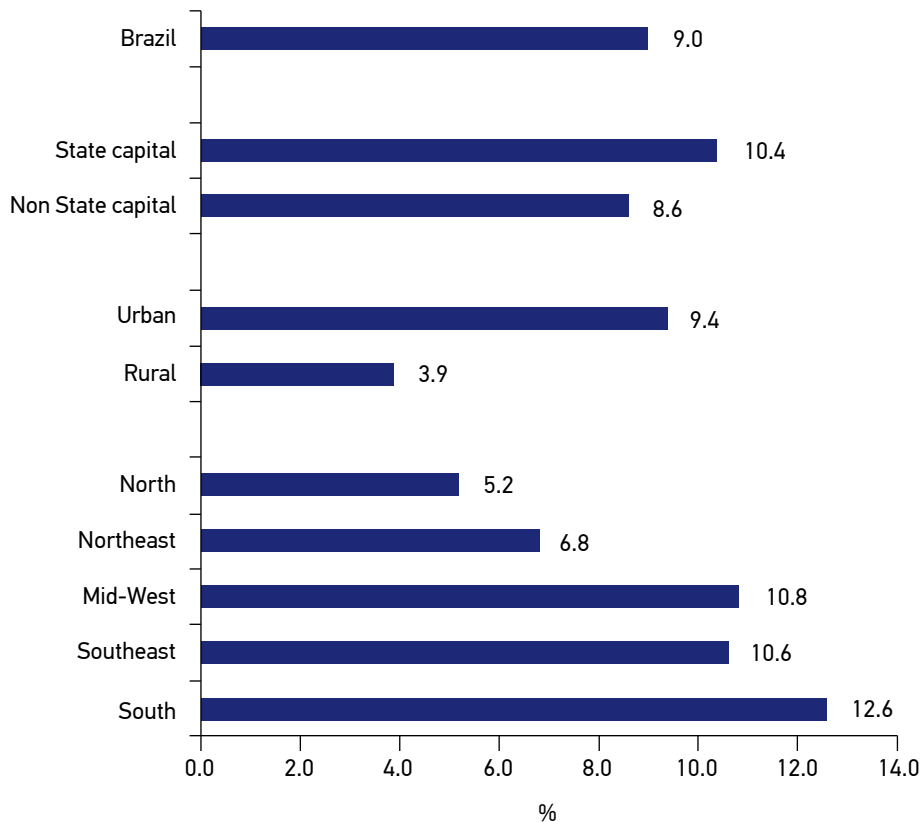

Figure 1. Prevalence of illicit drug use throughout life in Brazil, Stat capitals, urban and rural areas, and macro-regions. National School Health Survey, 2015 (n = 101,760).

decrease following the frequency with which parents or guardians knew what the students did in their free time (p < 0.001) and checked their school activities (p < 0.001). The highest number of family aggressions in the last 30 days was associated with higher proneness to this behavior: individuals reporting between 4 and 5 aggressions were 2.49 times more likely to report lifetime use of illicit drugs (95%CI, 04–3.03) when compared with those who did not report aggressions.

Table 1. Association of demographic and socioeconomic variables with the use of illicit substances throughout life among ninth-year schoolchildren, Brazil.

Variables	Distribution (%)	Prevalence	Adjusted analysis
		% (95%CI)	PR (95%CI)
Gender			p < 0.001
Female	48.7	9.5 (8.9 – 10.1)	1
Male	51.4	8.5 (8.0 – 9.1)	0.88 (0.82 – 0.95)
Ethnicity			p = 0.20
White	36.2	9.1 (8.4 – 9.7)	1
Black	13.4	10.3 (9.2 – 11.4)	1.05 (0.92 – 1.19)
Yellow	4.1	8.5 (7.2 – 9.9)	0.98 (0.82 – 1.17)
Brown	43.1	8.6 (8.0 – 9.3)	0.92 (0.83 – 1.02)
Indigenous	3.3	7.7 (6.2 – 9.5)	0.86 (0.67 – 1.09)
Mother's educational level			p = 0.007*
No schooling	7.4	8.6 (7.4 – 10.0)	1
Primary school	35.3	8.8 (8.2 – 9.5)	1.04 (0.88 – 1.23)
Secondary school	32.9	9.2 (8.5 – 10.0)	1.10 (0.93 – 1.31)
Higher education	24.4	9.4 (8.6 – 10.3)	1.21 (1.01 – 1.46)
School network			p < 0.001
Public	85.5	9.3 (8.8 – 9.9)	1
Private	14.5	6.8 (6.1 – 7.6)	0.74 (0.64 – 0.85)
Living with parents			p < 0.001
No	5.7	13.1 (11.7 – 14.7)	1
Only father	30.6	11.6 (10.8 – 12.4)	0.90 (0.78 – 1.05)
Only mother	4.4	12.6 (10.7 – 14.7)	0.94 (0.77 – 1.16)
Both parents	59.4	7.0 (6.5 – 7.5)	0.54 (0.47 – 0.62)

95%CI: 95% confidence interval; PR: prevalence ratio; *trend p-value; models adjusted for all variables included in the table (level 1).

Table 3 shows that having been a victim of bullying increased the probability of reporting illicit substance consumption in life (PR = 1.09; 95%CI 1.01–1.18). The same is true for school absenteeism without parents' knowledge. Similarly, higher prevalence was estimated for students who reported feeling lonely in the past 12 months, especially those who reported always feeling this way (PR = 1.39,

Table 2. Association of work, age and familial cohesion with the use of illicit substances throughout life among ninth-year schoolchildren, Brazil.

Variables	Distribution (%)	Prevalence	Adjusted analysis
		% (95%CI)	PR (95%CI)
Paid work[+]			p < 0.001
No	87.8	8 (7.5 – 8.5)	1
Yes	12.2	16.1 (14.9 – 17.3)	1.72 (1.56 – 1.89)
Age (years)[+]			p < 0.001*
11 a 13	18.3	4.7 (4.7 – 5.3)	1
14	51.1	7.3 (6.8 – 7.9)	1.51 (1.24 – 1.84)
15	19.7	13.5 (12.5 – 14.6)	2.75 (2.27 – 3.35)
16 a 19	10.9	15.7 (14.4 – 17.0)	3.14 (2.55 – 3.86)
Frequency of meals with parents/caregivers[++]			p < 0.001
Every day	70.7	7.4 (6.9 – 8.0)	1
Rarely	19.2	14 (13.0 – 15.0)	1.26 (1.13 – 1.40)
How often parents know what children do in their spare time[++]			p < 0.001*
Never	10.9	14.6 (13.3 – 16.0)	1
Rarely	8.7	17.1 (15.6 – 18.7)	1.20 (1.05 – 1.37)
Always	41.0	4.7 (4.3 – 5.1)	0.48 (0.42 – 0.56)
Parents check homework[++]			p < 0.001*
Never	25.2	13.6 (12.7 – 14.5)	1
Rarely	19.1	10 (9.2 – 10.8)	0.88 (0.79 – 1.00)
Always	19.8	5.4 (4.7 – 6.1)	0.60 (0.51 – 0.70)
Familial aggression in the past 30 days[++]			p < 0.001
No	85.5	7.4 (7.0 – 7.9)	1
≥ 12	1.4	20.6 (17.0 – 24.7)	2.19 (1.76 – 2.73)

95%CI: 95% confidence interval; PR: prevalence ratio; *trend p-value;
[+]adjusted between them (level 2) and for variables in level 1 (gender, mother's educational level, school network, living with parents); [++]adjusted between them (level 3) and for variables in levels 1 and 2. All variables have intermediate categories besides those exposed, but with behavior that follows the direction of the results presented.

95%CI 1.16–1.67), and those who reported difficulty sleeping in the past 12 months (p < 0.001).

Lifetime use of illicit drugs is associated with current and lifetime consumption of tobacco and alcoholic beverages and is reported to be 7.84 times more common among students who currently smoke (last 30 days); 5.48 times more prevalent in those who have smoked at some point in life, but not in the past 30 days; 5.53 times higher in those who reported consuming alcohol in the last 30 days; and 3.81 times higher in those who reported having consumed alcohol at some point in life, but not in the past 30 days. There was also an upwards tendency of consumption prevalence when participants reported a greater number of sexual partners in life (p < 0.001) (Table 4).

DISCUSSION

In 2015, the use of illicit drugs by ninth grade schoolchildren in Brazil was associated with individual characteristics such as female gender, older age, smoking habit and alcohol consumption, large number of mental health complaints and sexual partners. As for the contexts, an association with urban environments was estimated, especially State capitals, public school, higher educational level of mothers, insertion o participants in the labor market and less evidence of family aggression or parental supervision.

Unlike the findings of 2012[13], higher rates were estimated among female schoolchildren and in public schools. In 2012, the predominance found among boys disappeared in the adjusted analysis. In 2015, reports of this behavior were also predominantly by girls, even after adjusted analysis. The changes in distribution of this behavior according to gender, keeping up with the change in gender issues, show that preventive actions and programs need to be attentive to the insertion of girls in this context. This upward statistical trend involving girls may be indicating that illicit substances' industry is succeeding in its efforts to expand markets, including the female gender in consumer chains[16-18]. Some studies suggest age-related differences, with predominance of consumption and related consequences among men in adulthood and among women in adolescence[19], but an epidemiological transition may be taking place, with possibility of changes in profiles of the adult population when current female users become adults.

As for the link with public schools of those who reported having used illicit drugs, there is a possibility that the characteristics of market for these drugs determines greater expansion into populations that rely on this school network. Public schools serve populations in urban areas that are exposed to precarious social infrastructure and investment, which leads to greater exposure to all types of violence and negligence, thus favoring the expansion of drug markets[20]. However, schools can perform monitoring and intervention actions such as establishing effective limits, getting

Table 3. Association of variables related to problems in school and mental health with the use of illicit substances throughout life among ninth-year schoolchildren, Brazil.

Variables	Distribution (%)	Prevalence	Adjusted analysis
		% (95%CI)	PR (95%CI)
Has suffered bullying[+]			p = 0.030
No	51.7	8 (7.5 – 8.7)	1
Yes	48.4	9.9 (9.4 – 10.5)	1.09 (1.01 – 1.18)
Missed school without parents knowing in the past 30 days[+] (days)			p < 0.001*
Never	76.6	6.6 (6.2 – 7.0)	1
1-2	15.7	13.1 (12.0 – 14.3)	1.64 (1.46 – 1.85)
3-5	4.9	19.5 (17.4 – 21.8)	2.03 (1.76 – 2.36)
6-9	1.4	29.9 (25.0 – 35.3)	2.58 (2.12 – 3.14)
≥ 10	1.5	35.4 (29.9 – 41.4)	2.91 (2.38 – 3.56)
Has felt alone in the past 12 months[++]			p < 0.001*
Never	34.5	6.6 (6.0 – 7.2)	1
Rarely	21.6	8.2 (7.3 – 9.2)	1.23 (1.06 – 1.42)
Sometimes	27.5	9.6 (8.7 – 10.5)	1.20 (1.05 – 1.37)
Often	10.1	12.2 (11.1 – 13.5)	1.35 (1.14 – 1.60)
Always	6.3	16.9 (15.2 – 18.9)	1.39 (1.16 – 1.67)
Could not sleep in the past 12 months[++]			p < 0.001
Never	34.8	6.3 (5.8 – 6.9)	1
Rarely	29.0	7.9 (7.3 – 8.5)	1.18 (1.04 – 1.34)
Sometimes	24.9	10.7 (9.9 – 11.6)	1.37 (1.20 – 1.56)
Often	8.1	15.6 (14.2 – 17.1)	1.64 (1.39 – 1.93)
Always	3.2	17.5 (15.0 – 20.3)	1.51 (1.22 – 1.87)
Number of close friends[++]			p = 0.91
None	4.3	13.2 (11.2 – 15.5)	1
1	6.2	10.6 (9.4 – 12.0)	0.95 (0.75 – 1.20)
2	12.6	10.2 (9.1 – 11.4)	0.98 (0.79 – 1.22)
≥ 3	76.9	8.4 (7.9 – 8.9)	0.95 (0.78 – 1.15)

95%CI: 95% confidence interval; PR: prevalence ratio; [+]adjusted between them (level 4) and for variables in levels 1, 2 and 3; [++]adjusted between them (level 5) and for variables in levels 1, 2, 3 and 4; *trend p-value.

closer to and exchanging more information with students' relatives. Schools have been encouraged to do so,[21] and it is possible that private schools are doing it more quickly or more effectively than public schools. It was not possible to check here if there were transfers of schoolchildren from the private to the public network, so one cannot evaluate a potential association between change of school and drug use.

Table 4. Association of individual life habits with the use of illicit substances throughout life among ninth-year schoolchildren in Brazil.

Variables	Distribution (%)	Prevalence	Adjusted analysis
		% (95%CI)	PR (95%CI)
Smoking			p < 0.001
Never	81.7	2.4 (2.1 – 2.6)	1
Once in life	12.7	29.8 (28.2 – 31.5)	5.48 (4.74 – 6.34)
Currently	5.6	58.0 (55.2 – 60.8)	7.84 (6.71 – 9.16)
Alcohol			p < 0.001
Never	47.1	1.0 (0.8 – 1.2)	1
Once in life	29.6	8.8 (8.1 – 9.6)	3.81 (2.97 – 4.90)
Currently	23.3	25.3 (24.1 – 26.6)	5.53 (4.26 – 7.18)
Physical activity (days per week)			p = 0.29
None	34.4	9.8 (9.1 – 10.5)	1
1	16.0	6.7 (5.9 – 7.6)	0.88 (0.78 – 0.99)
2	13.0	8.0 (7.1 – 8.9)	1.00 (0.88 – 1.13)
3	10.0	8.7 (7.7 – 9.8)	0.99 (0.86 – 1.13)
4	6.3	9.4 (8.0 – 10.9)	1.08 (0.91 – 1.29)
≥ 5	20.3	10.0 (9.2 – 10.9)	1.00 (0.90 – 1.11)
Number of sexual partners throughout life			p < 0.001*
Never	72.6	3.5 (3.2 – 3.8)	1
1	10.1	17.3 (15.5 – 19.4)	1.93 (1.69 – 2.21)
2	5.4	20.9 (18.9 – 22.9)	2.05 (1.79 – 2.34)
3 a 5	7.0	26.4 (24.4 – 28.5)	2.21 (1.94 – 2.52)
> 5	5.0	34.1 (31.7 – 36.7)	2.30 (2.00 – 2.65)

95%CI: 95% confidence interval; PR: prevalence ratio; models adjusted for all variables included in the table (level 6) and variables in levels 1, 2, 3, 4 and 5 (gender, mother's educational level, school network, living with parents, age, work, frequency of meals with caregiver, how often parents know what children do in their spare time, parents check homework, familial aggression, bullying, missed school without parents knowing in the past 30 days, could not sleep in the past 30 days, number of close friends); *Trend p-value.

Drug use can lead to school dropout and impair one's and one's family's financial condition. The upward trend in prevalence at earlier ages may, at some point, contribute to a greater concentration of young users in public schools. It is also important to investigate, in the future, if private schools are not reacting to early illicit drug use with exclusion policies, too much exposure or even school withdrawal, as previously described in other contexts[22].

The associations of illicit drug use with physical activity and the number of one's friends reported, both findings of the 2012 survey[13], were not repeated in 2015. The variables representing these items were different in 2015 and in 2012, but the loss of effect may be following the changes related to gender. Some studies indicate gender specificities as related to these variables' trend, although they move in opposite directions, since physical activity has been described as less prevalent among girls than among boys[23-25], and part-taking in social networks and groups of friends became more expressive[25].

Differences also with regard to purchasing power may explain the results of some variables in association with the outcome under study. Higher prevalence of illicit drug use by children with higher maternal educational level, paid work, living in state capitals and urban areas (with higher income concentration in the country), as well as among residents of regions with the highest gross domestic product (South, Midwest and Southeast regions) may indicate that individuals with greater purchasing power or living in arear where the circulation of these products is broader are more exposed[26]. Street children are most probably not included in PENSE, since there is also the tendency to school dropout. Street conditions may increase exposure to easy offer and a range of conditions associated with drug use. The inclusion of this group of children might modify the trends of these variables. Even so, higher purchasing power alone may not explain drug use. Other dimensions and contexts seem to have a marked influence.

PeNSE 2015 reported data similar to those of 2012[13] regarding the effect of bullying and family aggression events on higher prevalence of illicit drug use, while cohesion and family supervision are associated with lower prevalence. The family nucleus has a significant influence on children and adolescents' behavior, and the high proportion of protective or hostile conditions makes a difference[27].

These factors do not influence illicit drug use only, but also alcoholic beverages and tobacco use, whose consumption is usually strongly associated with the use of any other drugs[28,29], as also reported in this study. The fact that the clear insertion of illicit drugs into the mainstream media is not so obvious is important here, but despite restrictions, tobacco and alcohol still have a relevant space in advertising in the country. The media plays an important role in building and spreading ideologies in society. These messages reach a significant number of people, including children and young people, and have the potential to change behaviors, judgments, and attitudes[30].

The expansion of the alcohol and tobacco markets reinforces the expansion of illicit drug markets. Our country has progressed in restricting tobacco advertising, but companies have heavily invested in offering their product to specific audiences through packaging in different formats, colors and accompanied by new descriptors[31]. The industry uses pleasure and satisfaction as a mechanism to incite licit drug use (alcohol and tobacco), and this type of marketing action substantially contributes to high consumption rates, which is accompanied by the easy acquisition of products, since inspection is precarious and outdated[6,32].

We found no statistically significant differences between the prevalence of illicit drug use between the 2009[33], 2012[13] and 2015 PeNSE samples, which indicates that the efforts of public policies aimed at restricting substance use or at least postponing its initiation have not been successful. At best, they avoided growth in the prevalence of this behavior. The focus on the younger audience by drug producers and distributors or health services has the same motivation. The findings suggest that this tension has been preserved with relative stability. Early consumption represents a longer period of consumption in life and a trend towards more intense levels of dependency. Schools have great potential to implement initiatives that promote health. However, their environment is also attractive for the sale, consumption and recruitment of adolescents into drug trafficking. In a nationwide study conducted in the United States, 25.6% of students reported having received or been offered illicit drugs by schoolchildren in the past 12 months[34]. On the other hand, several programs conducted in schools in several countries have reached satisfactory results of prevention or drug use reduction[8,9,35]. Unfortunately, in Brazil few schools implement programs related to drug use prevention in their curricula[32]. Although the Brazilian public network faces severe economic restrictions and poor training of its managers, the creation of a preventive culture should no longer be postponed, since isolated actions will hardly encompass the complexity of the topic. This edition of PeNSE confirms the trend towards a higher prevalence of drug use in younger populations.

The main limitation of this study is the fact that schoolchildren who are no longer attending school, who may have greater vulnerability to psychoactive substance use and be part of the high statistics, were not represented. In addition, schoolchildren from the night period were also excluded from the sample in order to ensure comparability with previous editions of PeNSE, in which the same exclusion criteria was applied. Being a self-reported interview also subjects results to bias, but, again, comparability is guaranteed by using the same pattern of data collection from previous studies. It is also important to consider the possibility of causal reversibility in each of analysis presented here, since the study is cross-sectional. Even with some limitations, studying these behaviors among Brazilian young people, especially in a serial way, as made possible by PeNSE, supports the planning and evaluation of actions and public policies.

CONCLUSION

Lifetime use of illicit drugs among ninth-grade schoolchildren in Brazil remains stable, and no significant differences were found between the samples of the study PeNSE from 2009, 2012 and 2015. In this edition, however, this behavior was more common among female participants, and was associated with sexual activity, consumer power and difficulties such as bullying, familial aggression or emotional complaints. Family and school influences are expressed as particularly protective factors, especially when there are records of parental supervision actions and direct care.

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