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ORIGINAL ARTICLE

Drug use among Brazilian adolescents: National Survey of School Health

O uso de drogas entre adolescentes brasileiros: Pesquisa Nacional de Saúde do Escolar

Consumo de drogas entre adolescentes brasileños: Encuesta Nacional de Salud Escolar

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ABSTRACT The use of psychoactive substances, such as cigarettes, alcohol, and other drugs, during adolescence is still quite common and can cause short- and long-term health consequences. The present study estimated the prevalence of illicit drug experimentation and use during the previous 30 days among Brazilian schoolchildren and identified associated factors. Secondary data came from the National Survey of School Health, including students aged 13-17 years from public and private elementary and high schools. Bivariate and multivariate analyses assessed factors associated with illicit drug experimentation and recent use. Overall, 5.15% (95% CI: 4.77-5.55) reported using drugs on one or more days in the previous month, while 13.03% (95% CI: 12.44-13.65) reported lifetime experimentation with marijuana, cocaine, crack, glue, loló, lança-perfume, ecstasy, oxi, MD, skank, or other drugs. Experimentation was more likely among adolescents aged 16-17 years (OR: 2.47; 95% CI: 2.19-2.78), tobacco users (OR: 3.39; 95% CI: 2.96-3.89), alcohol users (OR: 2.40; 95% CI: 2.18-2.70), and those who had witnessed friends using drugs (OR: 5.39; 95% CI: 4.82-6.03). These findings emphasize the need for integrated school, family, and community prevention strategies that address substance use, peer influence, early intervention, and older adolescents, while strengthening protective behaviors throughout this critical developmental period.

KEYWORDS Adolescent. Adolescent health. Adolescent behavior. Illicit drugs.

RESUMO *O uso de substâncias psicoativas na adolescência, como cigarro, álcool e outras drogas, permanece elevado, acarretando consequências em curto e longo prazo para a saúde. Objetivou-se estimar a prevalência da experimentação e do uso de drogas ilícitas nos últimos 30 dias entre escolares brasileiros e identificar os fatores associados a essa prática. Apuraram-se dados secundários da Pesquisa Nacional de Saúde do Escolar composta por escolares de 13 a 17 anos do Ensino Fundamental e Médio de escolas públicas e privadas. Realizou-se uma análise bivariada, seguida da análise multivariada dos fatores associados ao uso e à experimentação de drogas ilícitas pelos adolescentes. Desses, 5,15% (IC 95%: 4,77-5,55) relataram ter consumido drogas um ou mais dias e 13,03% (IC 95%: 12,44-13,65) narraram ter experimentado, alguma vez na vida, drogas como maconha, cocaína, crack, cola, loló, lança-perfume, ecstasy, oxi, MD, skank ou outras. Adolescentes de 16 e 17 anos (OR: 2,47; IC 95%: 2,19-2,78), que usam tabaco (OR: 3,39; IC 95%: 2,96-3,89), ingerem bebidas alcoólicas (OR: 2,4; IC 95%: 2,18-2,70) e presenciam os amigos usando drogas (OR: 5,39; IC 95%: 4,82-6,03) apresentaram maior chance de experimentação de drogas.*

PALAVRAS-CHAVE *Saúde do adolescente. Adolescente. Comportamento do adolescente. Drogas ilícitas.*

RESUMEN *El consumo de sustancias psicoactivas en la adolescencia, como cigarrillos, alcohol y otras drogas, sigue siendo alto, con consecuencias a corto y largo plazo para la salud. Este estudio estimó la prevalencia de la experimentación y el uso de drogas ilícitas en los últimos 30 días entre los escolares brasileños e identificó los factores asociados a esta práctica. Se recopilaron datos secundarios de la Encuesta Nacional de Salud Escolar, compuesta por escolares de 13 a 17 años de escuelas públicas y privadas. Se realizó un análisis bivariado, seguido de un análisis multivariado de los factores asociados al consumo y la experimentación de drogas ilícitas por parte de adolescentes. De estos, el 5,15% (IC 95%: 4,77-5,55) reportó haber consumido drogas durante uno o más días y el 13,03% (IC 95%: 12,44-13,65) informó haber probado, en algún momento de su vida, drogas como marihuana, cocaína, crack, pegamento, loló, lança-perfume, éxtasis, oxy, MD, skank u otras. Los adolescentes de 16 y 17 años (OR: 2,47; IC 95%: 2,19-2,78), que consumen tabaco (OR: 3,39; IC 95%: 2,96-3,89), beben bebidas alcohólicas (OR: 2,4; IC 95%: 2,18-2,70) y testigos de amigos que consumen drogas (OR: 5,39; IC 95%: 4,82-6,03) tenían más probabilidades de experimentar con drogas.*

PALABRAS CLAVE *Salud del adolescente. Adolescente. Conducta del adolescente. Drogas ilícitas.*

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Introduction

According to the World Health Organization (WHO), adolescents are individuals experiencing a transitional period between childhood and adulthood, encompassing the age range of 10 to 19 years[1]. Currently, there are approximately 1.3 billion adolescents worldwide, representing 16% of the global population[2]. In Brazil, approximately 14% of the population, or 30 million people, are in the adolescent stage[3].

Adolescence is characterized by neurochemical and neurobiological changes that can lead to physical, psychological, and social transformations in an individual[4]. These changes may make adolescents more vulnerable to health-risk behaviors, such as involvement in accidents, unplanned pregnancy, and sexually transmitted infections, as well as the adoption of specific habits, such as the use of licit or illicit drugs, which may persist throughout their lives[5,6]. The impact of drug use on global health, as assessed by the Global Burden of Disease 2019 (GBD 2019) study, indicates that the use of psychoactive substances, including tobacco and alcohol, is among the leading health risk factors[7]. In 2021, approximately 296 million people, aged 15 to 64 years, used psychoactive substances; an estimated 39.5 million people were affected by drug use disorders, and 0.6 million deaths were reported annually, consisting of approximately 420,000 men and 160,000 women[8]. Furthermore, more than 36 million healthy life years lost, measured in Disability-Adjusted Life Years (DALYs), were attributed to drug use in 2019[8].

Among adolescents, substance use is linked to deaths resulting from traffic accidents, violence, suicide, drowning, and other unintentional injuries[9], leading to physical and mental health issues as well as to the development of chronic diseases, one of the major public health challenges of the 21st century[10,11]. Data from 2019 indicate a 22% global prevalence of alcohol consumption among adolescents, aged 15 to 19 years[12]. In Brazil, the use of psychoactive substances, such as tobacco, alcohol, and other drugs, continues to be high among adolescents, leading to both short- and long-term health consequences, ranging from an increase in DALYs to negative behavioral outcomes associated with intoxication[10]. Nevertheless, the issue of drug use and its impact on adolescent health requires greater collaboration among researchers to develop studies that provide further clarity and inform the creation of policies specifically geared toward this age group[13].

Given this context, the United Nations has established policies and goals within the 2030 Agenda for Sustainable Development that prioritize strengthening the prevention and treatment of narcotic drug abuse, offering an opportunity to improve the wellbeing of adolescents[14]. Therefore, the present study aimed to estimate the prevalence of experimentation with and use of illicit drugs within the past 30 days among Brazilian schoolchildren, as well as to identify the factors associated with this behavior.

Material and methods

This study performed an analysis of secondary data from the National Survey of School Health (Pesquisa Nacional de Saúde do Escolar – PeNSE), conducted every three years by the Brazilian Institute of Geography and Statistics (IBGE) in partnership with the Ministry of Health. The sample consisted of students, aged 13 to 17 years, enrolled in elementary or high school at public or private institutions[12].

Students were informed about the survey in advance and provided their consent to participate. Those who agreed to take part completed a questionnaire via smartphone covering various topics, including socioeconomic status; family background; diet; physical activity; experimentation with and use of cigarettes, alcohol, and other drugs; as well as issues related to violence, safety, accidents, and other living conditions[12].

All students present in the selected classes on the day of data collection were invited to participate in the survey. In 2019, the sample

of students, aged 13 to 17 years, was collected from 4,242 schools and 6,612 classes, involving 159,245 students[12]. Considering the enrolled students, and those who did not respond, the sample attrition rate was 15.4% in 2019. The survey was conducted in both public and private schools, covering the following geographic levels: Brazil, major geographic regions, states, state capitals, and the Federal District[12].

In the present study, two indicators regarding the use of illicit drugs were evaluated: lifetime experimentation with illicit drugs and drug use within the last 30 days ('current use'). These were based on questions from the 2019 PeNSE questionnaire: "Have you ever used any drugs in your lifetime, such as marijuana, cocaine, crack, glue, *loló*, *lança-perfume*, ecstasy, *oxi*, MD, skank, or others?"[15] and "In the last 30 days, how many days did you use any drugs?"[15].

The explanatory variables analyzed in this study were:

1) Sociodemographic: a) sex (male or female); b) age group (13–15, 16–17 years); c) skin color/race (White, Black, Asian, Brown, or Indigenous);

2) Family context: d) living with father and/or mother (no or yes); e) family supervision (whether parents or guardians knew what the student was actually doing during his/her free time over the last 30 days) (no or yes); f) skipping classes without permission (yes or no);

3) Mental health: g) feeling lonely (feeling alone during the last 12 months) (no or yes); h) feeling sad (no or yes);

4) Substance use: i) alcohol consumption (having had at least one glass or one serving of an alcoholic beverage) (no or yes) in the 30 days prior to the survey; j) regular tobacco use (no or yes) in the 30 days prior to the survey; k) use of other tobacco products (no or yes);

5) Influence of people close to the individual: l) friends who used drugs in their presence (no or yes);

For the description of the variables, relative values were used, along with their respective 95% confidence intervals (95% CI). Pearson's chi-square test was applied to assess the association between independent variables across the groups. Statistical significance was defined as a p-value ≤ 0.05.

Initially, a bivariate analysis was conducted to evaluate the effect of each variable individually; variables with a p-value < 0.05 were selected for the model (*table 1*). Subsequently, a multivariate analysis was performed using logistic regression. The measure of association estimated was the Odds Ratio (OR), with a 95% CI. The final model consisted of variables with a p-value of 0.05 or less (*table 2*). Statistical analysis was carried out using Stata software, version 14.1 (StataCorp LP, College Station, USA), applying the '*svy*' procedure with weighting.

The PeNSE study complies with the guidelines and regulatory standards for research involving human subjects and was approved by the National Research Ethics Commission of the Ministry of Health (CONEP/MS), logged under Opinion No. 3,249,268, dated April 8, 2019.

Results

Among the adolescents participating in the study, 13% (12.4–13.6) reported having experimented with drugs, such as marijuana, cocaine, crack, inhalants (glue, *loló*, *lança-perfume*), ecstasy, *oxi*, MD, skank, or others, at some point in their lives. Regarding factors associated with drug experimentation among the students, 21.7% (95% CI: 20.4–23.0) were between 16 and 17 years of age; 19.1% (95% CI: 17.3–21.0) did not live with their father or mother; 18.1% (95% CI: 17.2–19.1) were not supervised by parents or family members; 23% (95% CI: 21.6–24.5) had skipped classes without the authorization of their parents or guardians; 63.5% (95% CI: 60.6–66.3) were regular tobacco users; 50.4% (95% CI: 47.9–52.9) used other tobacco products; 31.8% (95% CI: 30.3–33.3) consumed alcoholic beverages; and 45.81% (95% CI: 44.1–47.5) reported that friends had used drugs in their presence (*table 1*).

Table 1. Prevalence and odds ratios (OR) for sociodemographic, family, mental health, substance use, and peer influence variables among adolescents related to drug experimentation. Brazil, 2019

	Prevalence		Bivariate model			Final multivariate model		
Variables	**%**	**95% CI**	**OR***	**95% CI**	**P value**	**OR****	**95% CI**	**P value**
Total	**13.03**	**(12.44-13.65)**						
Age								
13 to 15 years	8.33	(7.81-8.89)	1.00					
16 to 17 years	21.66	(20.40-22.98)	3.04	(2.73-3.39)	0.00	2.47	(2.19-2.78)	0.00
Sex								
Male	13.02	(12.33-13.74)	1.00					
Female	13.05	(12.33-13.81)	1.00	(0.94-1.07)	0.93			
Race/Skin color								
White	13.83	(13.05-14.65)	1					
Black	14.92	(13.69-16.23)	1.09	(0.99-1.21)	0.08			
Yellow	10.79	(9.30-12.48)	0.75	(0.63-0.90)	0.00			
Brown	12.10	(11.38-12.85)	0.86	(0.79-0.93)	0.00			
Indigenous	11.73	(9.86-13.89)	0.83	(0.69-0.99)	0.04			
Lives with mother and/or father								
No	19.09	(17.34-20.98)	1.00					
Yes	12.57	(11.97-13.19)	0.61	(0.54-0.69)	0.00	0.76	(0.65-0.88)	0.00
Family supervision								
No	18.11	(17.18-19.07)	1.00					
Yes	10.90	(10.25-11.59)	0.55	(0.51-0.60)	0.00	0.82	(0.74-0.90)	0.00
Skipping classes without authorization								
No	10.63	(10.10-11.18)	1.00					
Yes	23.04	(21.65-24.50)	2.52	(2.33-2.72)	0.00	1.27	(1.14-1.41)	0.00
Feeling lonely								
No	9.65	(8.98-10.36)	1.00					
Yes	15.87	(15.16-16.60)	1.77	(1.64-1.90)	0.00	1.17	(1.06-1.30)	0.00
Feeling sad								
No	9.34	(8.60-10.14)	1.00					
Yes	14.95	(14.26-15.66)	1.71	(1.56-1.87)	0.00	1.26	(1.11-1.42)	0.00
Friends								
1 or more	12.84	(12.22-13.49)	1.00					
Does not have	17.33	(15.12-19.79)	1.42	(1.19-1.70)	0.00			
Regular tobacco use								
No	9.37	(8.90-9.87)	1.00					
Yes	63.55	(60.65-66.35)	16.86	(14.79-19.22)	0.00	3.39	(2.96-3.89)	0.00
Use of other tobacco-derived products								
No	7.75	(7.28-8.25)	1.00					
Yes	50.41	(47.94-52.88)	12.10	(10.85-13.5)	0.00	3.47	(3.04-3.97)	0.00

Table 1. Prevalence and odds ratios (OR) for sociodemographic, family, mental health, substance use, and peer influence variables among adolescents related to drug experimentation. Brazil, 2019

	Prevalence		Bivariate model			Final multivariate model		
Variables	**%**	**95% CI**	**OR***	**95% CI**	**P value**	**OR****	**95% CI**	**P value**
Alcoholic beverages								
No	5.67	(5.35-6.01)	1.00					
Yes	31.81	(30.35-33.31)	7.76	(7.15-8.41)	0.00	2.4	(2.18-2.70)	0.00
Friends used drugs in their presence								
No	6.04	(5.71-6.38)	1.00					
Yes	45.81	(44.10-47.52)	13.15	(12.09-14.31)	0.00	5.39	(4.82-6.03)	0.00

Source: Prepared by the authors.

*Adjusted for the variables significant to the model.

**Adjusted for variables significant to the multivariate model.

Regarding the indicator for recent drug use, 5.1% (95% CI: 4.8–5.5) reported having used drugs on one or more days during the 30 days prior to the survey. Among these, 8.6% (95% CI: 7.9–9.5) were aged 16–17 years; 5.6% (95% CI: 5.1–6.1) were male; 8.3% (95% CI: 7.1–9.8) did not live with a father or mother; 8.9% (95% CI: 8.2–9.7) received no family supervision; 10.9% (95% CI: 9.9–12.0) skipped classes without authorization; 43.4% (95% CI: 41.1–45.8) reported regular tobacco use; 15.4% (95% CI: 14.4–16.4) consumed alcoholic beverages; and 25.7% (95% CI: 24.3–27.1) stated that friends had used drugs in their presence (*table 2*).

Table 2. Prevalence and odds ratios (OR) for sociodemographic, family, mental health, substance use, and social influence variables among adolescents related to drug use. Brazil, 2019

	Prevalence		Bivariate model			Final multivariate model		
Variables	**%**	**95% CI**	**OR***	**95% CI**	**P value**	**OR****	**95% CI**	**P value**
Total	**5.15**	**(4.77-5.55)**						
Age								
13 to 15 years	3.24	(2.91-3.59)	1.00					
16 to 17 years	8.65	(7.90-9.46)	2.83	(2.46-3.26)	0.00	1.87	(1.56-2.23)	0.00
Sex								
Male	5.62	(5.14-6.15)	1.00					
Female	4.69	(4.27-5.14)	0.83	(0.74-0.92)	0.00	0.77	(0.67-0.89)	0.00
Race/Skin color								
White	5.50	(5.00-6.05)	1.00					
Black	6.58	(5.73-7.55)	1.21	(1.03-1.42)	0.02			
Yellow	4.75	(3.65-6.16)	0.86	(0.64-1.15)	0.30			
Brown	4.45	(4.03-4.93)	0.80	(0.71-0.90)	0.00			
Indigenous	4.90	(3.63-6.60)	0.89	(0.66-1.20)	0.43			

Table 2. Prevalence and odds ratios (OR) for sociodemographic, family, mental health, substance use, and social influence variables among adolescents related to drug use. Brazil, 2019

	Prevalence		Bivariate model			Final multivariate model		
Variables	**%**	**95% CI**	**OR***	**95% CI**	**P value**	**OR****	**95% CI**	**P value**
Live with mother and/or father								
No	8.35	(7.08-9.84)	1.00					
Yes	4.89	(4.52-5.29)	0.56	(0.47-0.67)	0.00			
Family supervision								
No	8.90	(8.17-9.69)	1.00					
Yes	3.57	(3.22-3.94)	0.38	(0.34-0.43)	0.00	0.60	(0.49-0.73)	0.00
Skipping classes without authorization								
No	3.76	(3.46-4.09)	1.00					
Yes	10.91	(9.93-11.99)	3.13	(2.81-3.49)	0.00	1.20	(1.00-1.45)	0.05
Feeling lonely								
No	3.70	(3.29-4.16)	1.00					
Yes	6.37	(5.94-6.84)	1.77	(1.60-1.97)	0.00			
Feeling sad								
No	3.75	(3.31-4.25)	1.00					
Yes	5.88	(5.43-6.36)	1.60	(1.40-1.83)	0.00	1.23	(1.00-1.50)	0.05
Friends								
1 or more	5.03	(4.65-5.44)	1.00					
Does not have	7.87	(6.39-9.66)	1.61	(1.27-2.05)	0.00			
Regular tobacco use								
No	2.36	(2.09-2.67)	1.00					
Yes	43.40	(41.06-45.77)	31.71	(27.09-37.12)	0.00	5.29	(4.44-6.30)	0.00
Use of other tobacco-derived products								
No	1.87	(1.66-2.12)	1.00					
Yes	28.23	(26.26-30.28)	20.61	(18.06-23.52)	0.00	3.47	(2.94-4.10)	0.00
Alcoholic beverages								
No	1.15	(1.00-1.32)	1.00					
Yes	15.37	(14.37-16.43)	15.62	(13.62-17.91)	0.00	2.95	(2.53-3.45)	0.00
Friends used drugs in their presence								
No	0.77	(0.67-0.90)	1.00					
Yes	25.68	(24.28-27.12)	44.28	(37.83-51.84)	0.00	13.60	(11.24-16.46)	0.00

Source: Prepared by the authors.

*Adjusted for the variables significant to the model.

**Adjusted for variables significant to the multivariate model.

After adjustments in the multivariate analysis (*table 1*), the following factors remained significantly associated with drug use among adolescents: being 16–17 years of age (OR: 2.47; 95% CI: 2.19–2.78), not living with one's mother and father (OR: 1.32; 95% CI: 1.14–1.54), a lack of supervision by a family member (OR: 1.22; 95% CI: 1.11–1.35), skipping classes without

permission (OR: 1.27; 95% CI: 1.14–1.41), feeling lonely (OR: 1.17; 95% CI: 1.06–1.30), feeling sad (OR: 1.26; 95% CI: 1.11–1.42), using tobacco (OR: 3.39; 95% CI: 2.96–3.89), using other tobacco products (OR: 3.47; 95% CI: 3.04–3.97), consuming alcoholic beverages (OR: 2.4; 95% CI: 2.18–2.70), and witnessing friends using drugs (OR: 5.39; 95% CI: 4.82–6.03). Among adolescents who reported having used drugs on one or more days during the 30 days prior to the survey (*table 2*), the following factors remained associated: being 16 or 17 years of age (OR: 1.87; 95% CI: 1.56–2.23), being male (OR: 1.3; 95% CI: 1.12–1.49), a lack of family supervision (OR: 1.66; 95% CI: 1.37–2.04), skipping classes without permission (OR: 1.20; 95% CI: 1.00–1.45), feeling sad (OR: 1.23; 95% CI: 1.00–1.50), regular use of tobacco (OR: 5.29; 95% CI: 4.44–6.30) or other tobacco-derived products (OR: 3.47; 95% CI: 2.94–4.10), consumption of alcoholic beverages (OR: 2.95; 95% CI: 2.53–3.45), and having friends who use drugs in their presence (OR: 13.60; 95% CI: 11.24–16.46).

Discussion

The present study analyzes data from the PeNSE survey and, for the first time, presents an examination of factors associated with illicit drug use among schoolchildren, based on the 2019 PeNSE. Adolescents, aged 16 to 17 years, who skipped classes without permission, experienced feelings of loneliness and sadness, used tobacco or tobacco products, consumed alcoholic beverages, or witnessed friends using drugs were more likely to have experimented with illicit substances, such as marijuana, cocaine, crack, inhalants (e.g., glue, *loló*, *lança-perfume*), ecstasy, *oxi*, MD, skank, or others. Conversely, adolescents who identified their skin color/race as Yellow or Brown, lived with a mother and/or father, and received supervision from family members were less likely to have experimented with drugs. Among those who reported recent drug use, being 16–17 years of age, being male, lacking family supervision, skipping classes without permission, feeling sad, using tobacco or tobacco-derived products regularly, consuming alcohol, and having friends who use drugs in their presence were all associated with a higher likelihood of recent drug use.

Drug experimentation and use among adolescents are influenced by multiple factors. Sociodemographic indicators, family context, mental health, and substance use all play a role in adolescent drug experimentation and consumption. Individual factors, such as age, race/skin color, and parental education, along with behavioral and health-related variables, contribute significantly to an individual's predisposition toward drug use. Thus, the age range of 16–17 years, in which a greater likelihood of experimentation with and recent use of drugs is observed among adolescents, may indicate that the initiation into illicit drug use occurs after the experimentation with licit substances, such as alcohol, given the latter's greater accessibility, as compared to illicit drugs[17]. Another factor potentially linked to the age range of 16–17 years is the increased involvement of adolescents in paid professional activities; students who had a job were also found to be more likely to consume alcoholic beverages[18].

Regarding the family context, it is evident that the home environment exerts a significant influence on adolescent behavior and can serve as a protective factor capable of reducing the use of illicit drugs[16,17]. However, for this to occur, the family environment must be characterized by healthy relationships and appropriate patterns of interaction among its members[16,17]. Living with both parents and receiving supervision from family members are both associated with protection against and a reduction in drug experimentation among adolescents[16,17]. Conversely, a family environment weakened by conflict, the presence of illicit drug use, parental absence, or a lack of a sense of belonging among family members contributed to drug use among adolescents[18]. These

findings have been documented in previous studies[19], highlighting the persistence of drug use within this population and suggesting that current policies aimed at preventing and addressing adolescent drug use are insufficient.

The mental health of Brazilian adolescents is also a growing concern; students frequently report a lack of close friends; feelings of sadness, worry, irritability, nervousness, and bad moods; as well as the belief that life is not worth living[20,21]. Furthermore, there is a significant link between mental health status and both the experimentation with and frequency of psychoactive substance use among adolescents, for instance, feeling sad or lonely may increase the likelihood of experimentation or frequent use of drugs[20,21]. Feelings of hopelessness, having friends who smoke or use other drugs, skipping school without parental permission, and a lack of family supervision have all been identified as factors associated with polysubstance use, including alcohol, tobacco, and illicit drugs, among adolescents[19].

The influence of those close to an individual, such as parents or friends who use substances, along with factors like poverty, social norms, and media portrayals that favor drug use, has proven to increase vulnerability to substance-related disorders. The need for socialization and acceptance by one's peer group is frequently associated with the consumption of alcohol and other drugs during adolescence. Having friends who smoke, for instance, increases one's own susceptibility to cigarette use; similarly, curiosity and regular interaction with peers who consume alcoholic beverages encourage experimentation and alcohol consumption. Furthermore, the concurrent use of substances, such as cigarettes and alcohol, strengthens the link to the initiation of other, illicit drugs. Thus, alcohol and tobacco products often serve as a gateway to the use of other substances, particularly among adolescents who face greater peer pressure from friends who value or engage in drug use.

Consequently, an adolescent's experimentation with and use of drugs are influenced by a variety of factors. This underscores the importance of fostering positive relationships with family and friends, supporting mental health, and implementing policies to prevent alcohol and tobacco use among adolescents, all of which help reduce these health risks. Addressing this issue requires a concerted effort from families, schools, civil society, government authorities, and the media to coordinate educational and public policy initiatives aimed at restricting the use of substances like alcohol and tobacco among adolescents, thereby ensuring they grow up in a family and social environment that is free from drugs.

As this is a cross-sectional study, the results reveal some limitations, including challenges in establishing causality between the indicators and the investigated outcomes; the potential for recall bias; the use of a self-administered questionnaire, which may lead to adolescents misinterpreting the questions; and selection bias, as the participants were students regularly enrolled and attending schools in Brazil, thus excluding adolescents without such an educational connection, who may in fact be more vulnerable. Nevertheless, the PeNSE survey employs a robust methodology that encompasses all major geographic regions, states, and state capitals, providing a close representation of the Brazilian reality. Furthermore, PeNSe is a national survey modeled after major international studies on adolescents, such as the Global School-based Student Health Survey, the Health Behaviour in School-aged Children study, and the Youth Risk Behavior Surveillance System, which allows for comparisons between them.

Conclusions

Brazilian adolescents continue to experiment with and use drugs; even more concerning is the concurrent use of other substances, such as tobacco and alcohol. A family and social environment consisting of drug use among friends and relatives is a factor linked to this

recurring reality, a pattern that has persisted over the years, revealing the inadequacy of political and social efforts to combat drug use among adolescents.

Therefore, it is essential that families, society, and government authorities increase their involvement in the lives of adolescents, filling their daily routines with healthy habits, restricting their access to psychoactive substances, and improving their mental health.

Authorship contributions

Antunes JT (0000-0001-7996-0773)* contributed to the analysis and interpretation of the data and to the drafting of the manuscript. Morais ÉAH (0000-0003-0156-3449)*, Souza JB (0000-0002-9308-7445)*, and Malta DC (0000-0002-8214-5734)* contributed to the critical review and preparation of the manuscript. ■

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