

**ORIGINAL ARTICLE**

## Drug Use by School Adolescents and Associated Factors

Felicialle Pereira da Silva<sup>1</sup>, Cindy Targino de Almeida<sup>2</sup>, Milena Laís de Souza Oliveira<sup>3</sup>  
Emanuela Batista Ferreira e Pereira<sup>4</sup>, Isla Daniela da Silva Pinto<sup>5</sup>  
Darine Marie Rodrigues da Silva<sup>6</sup>, Waldemar Brandão Neto<sup>7</sup>

**Highlights:**

Experiencing situations of violence influences drug consumption by adolescents.  
There is an association between drug use by adolescents and family members who use drugs.  
Having unprotected sex was related to drug use by adolescents.

**ABSTRACT**

*Objective:* to analyze the association between family, sexual and violence variables and drug use in the last month by adolescents. *Method:* this is a cross-sectional study, conducted with 147 students enrolled in a reference high school in the state education system of the state of Pernambuco. Students aged between 15 and 19 years participated. A sociodemographic questionnaire and part I of the Drug Use Screening Inventory, which deals with drug use in the last month, were used to collect data. Data analysis was performed and presented in univariate and bivariate forms. *Results:* the results revealed an association between experiencing violence, having family members who use drugs, having sexual intercourse and using or not using condoms during sexual intercourse, and drug use in the last month by adolescents. *Conclusion:* drug use in the last month by adolescent students is influenced by experiences of violence, drug use by family members, sexual intercourse and having these relations with or without the use of condoms.

**Keywords:** adolescent health; psychotropic drugs; nursing; adolescent; illicit drugs.

<sup>1</sup> Universidade de Pernambuco – UPE. Recife/PE, Brazil. <https://orcid.org/0000-0002-2805-7506>

<sup>2</sup> Universidade de Pernambuco – UPE. Recife/PE, Brazil. <https://orcid.org/0000-0002-2059-1501>

<sup>3</sup> Universidade de Pernambuco – UPE. Recife/PE, Brazil. <https://orcid.org/0000-0002-6465-712X>

<sup>4</sup> Universidade de Pernambuco – UPE. Recife/PE, Brazil. <https://orcid.org/0000-0003-4665-4379>

<sup>5</sup> Universidade de Pernambuco – UPE. Recife/PE, Brazil. <https://orcid.org/0000-0003-4703-979X>

<sup>6</sup> Universidade de Pernambuco – UPE. Recife/PE, Brazil. <https://orcid.org/0000-0001-9111-6380>

<sup>7</sup> Universidade de Pernambuco – UPE. Recife/PE, Brazil. <https://orcid.org/0000-0003-4786-9961>

## INTRODUCTION

The use of alcohol, tobacco and other drugs is a public health concern for the world population. In 2021, the United Nations (UN) World Drug Report reported a significant number when it estimated that around 36.3 million people suffer from drug use disorders. The term “drug” or “psychoactive substances” is defined by the World Health Organization (WHO) as any substance, natural or synthetic, legal or illegal, capable of producing, in varying doses, psychological dependence or organic dependence<sup>1</sup>.

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-V), substance use disorder is a pattern of use of any type of substance that causes clinically significant impairment or distress. For instance, a Brazilian study revealed that many adolescents experienced substance use disorders and, regarding the pattern of drug use, most of them were abusive users or were already likely to be dependent on these substances<sup>1-2</sup>.

In terms of age, these substances, especially when used at an early age, generally have serious biological, psychological, behavioral and social consequences. Therefore, during adolescence, drug use exposes and makes this group vulnerable to various risk factors, such as accidents, violence, risky sexual practices, among others, which can result in premature morbidity and mortality<sup>3-4</sup>.

The causes that lead adolescents to use drugs are multifactorial, since social and cultural influences in which they are inserted can act to facilitate or hinder their entry into drug use, and school, as a highly sociable environment that allows for diverse exchanges and favors the establishment of bonds, presents itself as a place conducive to new discoveries. Moreover, dysfunctional families or those characterized by a lack of dialogue, affection and limits are also risk factors for this problem<sup>5</sup>.

The negative consequences of drug use are generally linked to length of time of use and consumption pattern. In this regard, studies indicate that use begins in adolescence and that curiosity and peer influence are the most cited reasons for starting to use this practice. Research carried out in Portugal showed that the age of first use occurred at 14 years old among adolescents and young adults who had already tried this substance. In the United States and New Zealand, 42% of participants reported having tried marijuana by the age of 15, however, cocaine initiation occurred later, after the age of 20<sup>6-7</sup>.

Starting to use marijuana in adolescence, for instance, is associated with long-term neurocognitive effects. The effects of drugs in general can interfere with the development processes that occur in the brain, affect attention, concentration and decision-making, favoring poor academic performance, among other harms.

In this context, this study is justified by considering drug use in adolescence as a relevant topic to be explored, especially how risk factors behave in different samples studied. In view of this, this study aimed to analyze the association between family, sexual and violence variables and drug use in the last month by adolescents.

## METHOD

This is a cross-sectional study carried out in a reference high school in the state education system of the state of Pernambuco (PE). This school had 460 students regularly enrolled in high school, of which 207 were enrolled in the first year, 144 in the second year and 109 in the third year. The construction of this study was guided by the STrengthening the Reporting of Observational studies in Epidemiology (STROBE) Statement recommendations.

To establish sample size, a margin of error of 5% with a confidence level of 95% was used. Thus, the value obtained was 154 students. Data collection took place between September and December 2021, by two researchers trained to use the research instruments, in the morning and afternoon shifts, three times a week.

Initially, the school was contacted to participate in the study, and, after the management's acceptance, several visits were made to classes in order to explain the objective of the study to students and to make two copies of the Informed Consent Form (ICF) available to be given to parents of students under the age of 18. On the days of data collection, students under the age of 18 who brought a copy of the ICF signed by one of their guardians received the Informed Assent Form for signature. For students aged 18 or over who wished to participate, two copies of the ICF were given; one copy was given to participants and the other returned to the researcher. The entire data collection process was carried out using a self-administered instrument in a room provided by administrators. The mean response time per student was between ten and 15 minutes. It is worth noting that, during data collection, all protocols recommended by the Brazilian National Health Regulatory Agency (Anvisa – *Agência Nacional de Vigilância Sanitária*) regarding Covid-19 prevention and control measures were followed.

Students who were in the adolescent age group according to WHO<sup>8</sup>, up to 19 years old, who were regularly enrolled in the reference school for high school were included. Adolescents who were not in school or who were unable to understand the collection instruments and/or who completed them inadequately for any reason were excluded.

For data collection, the Drug Use Screening Inventory (Dusi)<sup>9</sup> form was used, which was originally developed in the United States of America by Dr. Raph Tarter, who provided authorization to use the instrument in this research. This instrument was translated and validated in Brazil by *Universidade Federal de São Paulo*. The questionnaire is self-administered, consisting of questions that assess the frequency of consumption of legal and illegal drugs in the last 30 days prior to the interview, as well as a profile of the intensity of problems related to use, such as in the areas of behavior, health, psychiatric disorders, among others<sup>10</sup>. Part I of this instrument was used, which allows screening of drug use in the last 30 days.

Another instrument used, developed by the researchers, contained sociodemographic variables, regarding violence suffered, drug use by family members and level of education of parents. To assess the variables, a semi-structured sociodemographic questionnaire developed by the researchers was applied, divided into four identification chunks: sociodemographic data; information about family members; data about participants' health; and data about their knowledge about drugs. The latter included empirical and/or theoretical questions about the adolescent's knowledge about legal and illegal drugs and their impacts on health. In this instrument, participants were identified by the letter E, in numerical sequence, in order of participation. A pilot test was applied, with 40 participants, which did not find any need for adjustments to the instrument.

The data were analyzed descriptively using absolute and percentage frequencies for categorical variables, and mean, standard deviation, minimum value, P25, median, P75 and maximum value, for numerical variables. To assess the association between two categorical variables, Pearson's chi-square test and Fisher's exact test were used, when the condition for using the chi-square test was not met. The margin of error used in the decision of statistical tests was 5%. The data were entered into a Microsoft Excel<sup>®</sup> spreadsheet, and the program used to obtain the statistical calculations was the IMB Statistical Package for the Social Sciences (SPSS) version 23.

The ethical precepts of Resolution 466/2012 of the Brazilian National Health Council, which provide for research with human beings, were met, and the research was approved by the *Hospital da Restauração* Research Ethics Committee, under Opinion 4,099,301.

## RESULTS

A total of 147 adolescents of both sexes participated in the study. Concerning gender, participants self-identified as male (82), female (64) and other (1), consolidating with 55.8%, 43.5% and 0.7%, respectively. The mean age was 16.8, with a standard deviation of 1.05. Regarding race/color, 60.5% of students self-identified as brown. The majority follow the evangelical religion (38.8%) and consider themselves heterosexual (85%).

In relation to experiences of sexual intercourse, the majority of adolescents reported having had sexual intercourse (61.2%), having had sexual intercourse with someone they knew (84.4%) and having used a condom (55.6%). As for the violence suffered, the majority of adolescents reported not having suffered violence (53.1%), having suffered psychological violence (58%) and having suffered violence from strangers (42%).

Concerning family issues, most adolescents reported having family members who use drugs (68%), a mother who has the highest level of education (high school) (45.6%) and a father with the same level of education as the mother (35.4%). As for the relationship with their parents, most adolescents said it was excellent (49.7%).

Table 1 shows the frequency of drug use by adolescents in the last 30 days. Through this, it was possible to show that the four most consumed drugs were alcoholic beverages, followed by painkillers, marijuana and tobacco. Regarding the frequency of drug use, the largest number of adolescents who reported consuming alcoholic beverages had a pattern of more than 20 (32.5%). Those who consumed painkillers, marijuana and tobacco had a frequency of 1 to 2, with the respective percentages of 50%, 44.4% and 45.5%.

Table 1 – Frequency of drug use in times in the last 30 days prior to the survey by type. Recife, Pernambuco (PE), Brazil, 2021

TYPE OF DRUG	FREQUENCY OF DRUG USE				Total n (%)	Did not answer n (%) <sup>(2)</sup>
	1 to 2 n (%) <sup>(1)</sup>	3 to 9 n (%) <sup>(1)</sup>	10 to 20 n (%) <sup>(1)</sup>	More than 20 n (%) <sup>(1)</sup>		
<b>Alcohol</b>	22 (27.5)	24 (30.0)	8 (10.0)	26 (32.5)	80 (100.0)	19 (12.9)
<b>Amphetamines</b>	6 (60.0)	3 (30.0)	1 (10.0)	-	10 (100.0)	25 (17.0)
<b>Inhalants, solvents</b>	5 (33.3)	4 (26.7)	3 (20.0)	3 (20.0)	15 (100.0)	21 (14.3)
<b>Cocaine/crack</b>	1 (12.5)	3 (37.5)	1 (12.5)	3 (37.5)	8 (100.0)	24 (16.3)
<b>Marijuana</b>	12 (44.4)	6 (22.2)	3 (11.1)	6 (22.2)	27 (100.0)	21 (14.3)
<b>Hallucinogens (LSD, mescaline, etc.)</b>	4 (57.1)	1 (14.3)	-	2 (28.6)	7 (100.0)	22 (15.0)
<b>Tranquilizers</b>	12 (66.7)	3 (16.7)	-	3 (16.7)	18 (100.0)	21 (14.3)
<b>Painkillers (over-the-counter)</b>	16 (50.0)	9 (28.1)	3 (9.4)	4 (12.5)	32 (100.0)	21 (14.3)
<b>Opioids (morphine, heroin, etc.)</b>	-	3 (100.0)	-	-	3 (100.0)	22 (15.0)
<b>Phencyclidine (angel dust)</b>	1 (25.0)	2 (50.0)	1 (25.0)	-	4 (100.0)	21 (14.3)
<b>Anabolic steroids</b>	4 (36.4)	5 (45.5)	-	2 (18.2)	11 (100.0)	21 (14.3)
<b>Ecstasy</b>	3 (60.0)	1 (20.0)	1 (20.0)	-	5 (100.0)	21 (14.3)
<b>Tobacco</b>	10 (45.5)	5 (22.7)	3 (13.6)	4 (18.2)	22 (100.0)	22 (15.0)

(1) Percentages obtained based on the 147 students surveyed.

(2) Percentages referring to the population that did not respond to the instrument.

Source: research database.

Tables 2 to 4 present the results of the cross-referencing between the drug use reported by students and study variables. Table 2 presents the statistically significant association between drug use and the variables “already had sexual intercourse” and “condom use”. Thus, it can be observed that the percentage of drug users is higher among those who responded positively to having had sexual intercourse (71.1%). Another variable that presented a statistically significant association was condom use, where the largest number of adolescents who claimed to have had drug use did not use a condom (82.5%).

Table 2 – Assessment of drug use according to sexual intercourse among adolescent students. Recife, Pernambuco (PE), Brazil, 2021

Variable	Drug use		Total group n (%)	P-value
	Yes n (%)	No n (%)		
<b>Already had sexual intercourse</b>				$p^{(1)} < 0.001^*$
Yes	64 (71.1)	26 (28.9)	90 (100.0)	
No	22 (40.7)	32 (59.3)	54 (100.0)	
<b>Total</b>	<b>86 (59.7)</b>	<b>58 (40.3)</b>	<b>144 (100.0)</b>	
<b>Who was the person they had their first sexual intercourse with</b>				$p^{(2)} = 1.000$
I already knew them	54 (71.1)	22 (28.9)	76 (100.0)	
I already knew them before, but only by sight	8 (72.7)	3 (27.3)	11 (100.0)	
<b>Total</b>	<b>62 (71.3)</b>	<b>25 (28.7)</b>	<b>87 (100.0)</b>	
<b>Condom use</b>				$p^{(1)} = 0.033^*$
Yes	31 (62.0)	19 (38.0)	50 (100.0)	
No	33 (82.5)	7 (17.5)	40 (100.0)	
<b>Total</b>	<b>64 (71.1)</b>	<b>26 (28.9)</b>	<b>90 (100.0)</b>	

(\*) Significant association at 5%.

(1) Pearson’s chi-square test.

(2) Fisher’s exact test.

Table 3 presents data on the analysis of the association between drug use and violence suffered. This table shows that the variable “suffered violence” was statistically associated with drug use, constituting the largest number of affirmative responses regarding drug use.

Table 3 – Drug use assessment according to violence suffered. Recife, Pernambuco (PE), Brazil, 2021

Variable	Drug use		Total group n (%)	P-value
	Yes n (%)	No n (%)		
<b>Suffered violence</b>				$p^{(1)} = 0.026^*$
Yes	39 (50.0)	39 (50.0)	78 (100.0)	
No	47 (68.1)	22 (31.9)	69 (100.0)	
<b>Total</b>	<b>86 (58.5)</b>	<b>61 (41.5)</b>	<b>147 (100.0)</b>	

<b>Violence suffered</b>				$p^{(1)} = 0.916$
<b>Physical</b>				
Yes	25 (67.6)	12 (32.4)	37 (100.0)	
No	22 (68.8)	10 (31.3)	32 (100.0)	
<b>Psychological</b>				$p^{(1)} = 0.240$
Yes	25 (62.5)	15 (37.5)	40 (100.0)	
No	22 (75.9)	7 (24.1)	29 (100.0)	
<b>Total</b>	<b>47 (68.1)</b>	<b>22 (31.9)</b>	<b>69 (100.0)</b>	
<b>Who committed the violence</b>				$p^{(2)} = 1.000$
<b>Parents</b>				
Yes	5 (71.4)	2 (28.6)	7 (100.0)	
No	40 (67.8)	19 (32.2)	59 (100.0)	
<b>Relatives</b>				$p^{(1)} = 0.177$
Yes	10 (55.6)	8 (44.4)	18 (100.0)	
No	35 (72.9)	13 (27.1)	48 (100.0)	
<b>Unknown</b>				$p^{(1)} = 0.236$
Yes	22 (75.9)	7 (24.1)	29 (100.0)	
No	23 (62.2)	14 (37.8)	37 (100.0)	
<b>Others</b>				$p^{(1)} = 0.721$
Yes	11 (64.7)	6 (35.3)	17 (100.0)	
No	34 (69.4)	15 (30.6)	49 (100.0)	
<b>Total</b>	<b>45 (68.2)</b>	<b>21 (31.8)</b>	<b>66 (100.0)</b>	

(\*) Significant association at 5%.

(1) Pearson's chi-square test.

(2) Fisher's exact test.

Source: research database.

Table 4 presents information regarding the factors associated with drug use and family variables. This analysis revealed a statistically significant association between drug use by the family and drug use by adolescents. Therefore, it is possible to observe that the largest number of adolescents who have family members who use drugs claimed to have used drugs.

Table 4 – Assessment of drug use according to drug use in family members and parental education level. Recife, Pernambuco (PE), Brazil, 2021

Variable	Drug use		Total group n (%)	P-value
	Yes n (%)	No n (%)		
<b>Family uses drugs</b>				$p^{(1)} = 0.001^*$
Yes	68 (68.0)	32 (32.0)	100 (100.0)	
No	18 (38.3)	29 (61.7)	47 (100.0)	
<b>Total</b>	<b>86 (58.5)</b>	<b>61 (41.5)</b>	<b>147 (100.0)</b>	

<b>Mother's education</b>				$p^{(1)} = 0.579$
Elementary school	23 (62.2)	14 (37.8)	37 (100.0)	
High school	42 (62.7)	25 (37.3)	67 (100.0)	
Higher education	16 (61.5)	10 (38.5)	26 (100.0)	
Did not study	5 (41.7)	7 (58.3)	12 (100.0)	
<b>Total</b>	<b>86 (60.6)</b>	<b>56 (39.4)</b>	<b>142 (100.0)</b>	
<b>Father's education</b>				$p^{(1)} = 0.235$
Elementary school	32 (74.4)	11 (25.6)	43 (100.0)	
High school	29 (55.8)	23 (44.2)	52 (100.0)	
Higher education	11 (61.1)	7 (38.9)	18 (100.0)	
Did not study	9 (75.0)	3 (25.0)	12 (100.0)	
<b>Total</b>	<b>81 (64.8)</b>	<b>44 (35.2)</b>	<b>125 (100.0)</b>	
<b>Relationship with parents</b>				$p^{(1)} = 0.852$
Great	43 (58.9)	30 (41.1)	73 (100.0)	
Good	39 (57.4)	29 (42.6)	68 (100.0)	
<b>Total</b>	<b>82 (58.2)</b>	<b>59 (41.8)</b>	<b>141 (100.0)</b>	

(\*) Significant association at 5%.

(1) Pearson's chi-square test.

Source: research database.

## DISCUSSION

The association between family, violence and sexual variables was found in this study. Thus, it was possible to observe that having suffered violence, family members who use drugs, sexual intercourse and the variable "condom use" interfered in drug consumption in the last month adopted by the adolescents who participated in this study. Concerning this last variable, it was observed that the majority of adolescents who claimed to have used drugs did not use condoms in their relationships.

In this study, it was observed that several types of drugs were consumed by adolescents, with alcohol standing out. Alcohol, as it is a legal drug and accepted by social standards, is a gateway to other drugs. Linked to this practice are the peculiar characteristics of adolescents that can interfere with the real understanding of the problem. From this perspective, it is known that adolescents are curious about new things and are strongly influenced by their peers, a reality that requires assertive interventions and care<sup>11</sup>.

In this study, experiencing situations of violence influenced drug use by adolescent students in this study. Regarding violence, it is known that the Brazilian national percentage of students who suffered physical aggression has increased progressively in recent years, and being a victim of such a context can predispose these individuals to be future users of alcohol and/or other drugs and, consequently, enable them to have emotional and behavioral problems<sup>12-13</sup>. Another study revealed that drug use by adolescents was associated with bullying, whether as a perpetrator or as a victim<sup>14</sup>.

It is also worth considering that drug use makes adolescents vulnerable to situations of violence, especially due to the involvement of many of these individuals in drug trafficking. In peripheral areas where drug trafficking exists, the financial resources and ostentation experienced by involvement in this practice become attractive. This reality leads many adolescents to become involved in crime<sup>15-16</sup>.

The significant association between drug use by adolescents and drug use by family members was demonstrated in this study. Supporting this finding, another study showed that students who have family members who use drugs were more likely to use drugs. In the study cited, the drug investigated was tobacco, and adolescents whose parents smoked were more likely to use tobacco. Adequate communication between parents and children can be a determining factor in preventing drug use among adolescents<sup>17-18</sup>.

Having sexual intercourse and engaging in it without using a condom was related to drug use by the adolescents participating in the study. Research that addresses sexuality in adolescence reports that there is a predisposition to early initiation of sexual practice at this stage<sup>19-20</sup>. In this evolutionary phase, many individuals experience the constant search for pleasure, and it is in this context that they have their first contact with drugs and sexual intercourse. When they begin their sexual life, many adolescents seek to favor this practice by consuming drugs. This is due to the search for new sensations, pleasure and overcoming shyness, which can result in unprotected sexual practice and the establishment of superficial relationships<sup>21</sup>.

Drug use by adolescents requires the implementation of actions focused on promoting health and preventing drug use by this group. These actions must be carried out continuously and in partnership with various sectors, such as health and education<sup>22</sup>. The level of information that adolescents have can protect them from drug use. Thus, educational activities carried out at school are important, through the articulation between the health and education sectors. In this scenario, it is even possible to work on the perspective of marginalization that many people have when it comes to drugs<sup>23</sup>.

The search for educational strategies that are appropriate for adolescents is important to achieve better results that alleviate the problem and its repercussions. These strategies may involve school and parent participation as well as considering the use of technologies. Knowledge of effective strategies facilitates decision-making and has a better impact on the problem highlighted<sup>24</sup>.

## CONCLUSIONS

The study concludes that having experiences of violence, family members who use drugs, sexual intercourse and the variable “condom use” were associated with drug use in the last month by adolescents. Drug use in adolescence is a phenomenon that deserves attention due to the harm it can cause to this group. Identifying the factors associated with drug use in adolescence can strengthen existing public policies that focus on promoting health in adolescence, especially those that value harm reduction and, consequently, mental health.

As a limitation of this study, there is the fact that it was carried out during the pandemic period, so there was absenteeism in school settings as well as the object of study having involved only the reality of a school. However, it reflects reality, which, when compared to a group with similar characteristics, allows for greater understanding and can guide health planning and structure measures that have a short or long-term impact on adolescent health. This study also encourages the development of other studies that consider significant associations with other variables, in order to broaden the understanding of the complexity involved in drug use in adolescence.

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Submitted: July 1, 2023

Accepted: March 7, 2024

Published: September 26, 2024

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### Authors' contributions

**Felicialle Pereira da Silva:** Conceptualization, Project administration, Supervision, Writing – original draft.

**Cindy Targino de Almeida:** Investigation, Visualization, Writing – original draft

**Milena Laís de Souza Oliveira:** Investigation, Visualization, Writing – original draft

**Emanuela Batista Ferreira e Pereira:** Writing – review & editing

**Isla Daniela da Silva Pinto:** Writing – review & editing

**Darine Marie Rodrigues da Silva:** Writing – review & editing

**Waldemar Brandão Neto:** Writing – review & editing

**All authors approved the final version of the text.**

**Conflict of interest:** No conflict of interest.

**There is no financing.**

### Corresponding author:

Felicialle Pereira da Silva

Universidade de Pernambuco – UPE

Av. Gov. Agamenon Magalhães – Santo Amaro, Recife/PE, Brasil. CEP 50100-010

cialle@hotmail.com

**Editor:** Christiane de Fátima Colet. Ph.D

**Editor-in-Chief:** Adriane Cristina Bernat Kolankiewicz. Ph.D

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