

Characterization of psychoactive substance use among adolescents at a higher education institution, Barranquilla-Colombia 2025

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Abstract

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Introduction: Adolescence, a stage marked by emotional and social transformations, presents a significant vulnerability to psychoactive substance (PAS) use. This reality is particularly relevant in urban contexts, where risk factors such as violence, social pressure, and academic stress converge. **Objective:** To examine the sociodemographic, familial, and emotional elements related to PAS use in youth aged 14 to 18 enrolled at a higher education institution in Barranquilla during the year 2025. **Methodology:** A quantitative, cross-sectional study was conducted, applying a confidential survey to 331 students. The data were analyzed using descriptive and inferential statistical tools via Statgraphics version 16 software, with a 95% confidence level. **Results:** 20.54% of respondents acknowledged having used PAS. A strong association was found between substance use and a history of psychological or sexual violence. No significant differences were found regarding family structure or socioeconomic status. **Conclusions:** Exposure to violent contexts significantly increases the likelihood of substance use among adolescents. This finding highlights the urgent need to implement comprehensive interventions focused on prevention, strengthening the family environment, and providing timely mental health care for youth.

INTRODUCTION

Youth is a highly significant stage of human development, characterized by emotional, psychological, and social changes that affect behavior. It is during this evolutionary phase that outings without adult supervision typically begin, and the peer group plays a fundamental role in identity construction. Within this context, young people are more likely to be exposed to substances such as alcohol, tobacco, and marijuana; it is also the period when exposure to various addictive substances begins for a significant number of individuals (Failde, 2015; Erazo, 2019). When defining the term "drug," it serves as a generic descriptor for the capacity to produce a reward response, which is a product of the biological and neuronal activation of the central nervous system in response to the substance. This sensation of pleasure and well-being comes at a cost to the subjects' lives, one of which is the lack of control over consumption (Zarrouq, 2016).

The use of psychoactive substances in youth has represented an increasing focus of interest in research over the last decades. Some findings from these studies indicate an increasingly early onset of consumption and changes in consumption patterns, with a certain inclination toward the equalization of consumption patterns between boys and girls (Degenhardt, 2012).

The family environment and the connection between adolescents and their parents, as well as the instructional models received during childhood, cultural factors, differences, and various aptitudes, along with parental perception of alcohol and other drug use, among other associated components, seemingly determine the proclivity toward certain

circumstances that may negatively influence the adolescent. Conversely, these factors can contribute to psychological, emotional, and behavioral empowerment, as well as the development of high-quality parental bonds and a healthy family system (Degenhardt, 2012).

MATERIALS AND METHODS

This is an observational, descriptive, and cross-sectional study conducted on a population of adolescents between 14 and 18 years of age who are part of a higher education institution located in Barranquilla. Convenience sampling was employed, resulting in a sample of 331 students. Regarding the inclusion criteria, participants were required to be late adolescents aged 14 to 18 belonging to the higher education institution under study. Likewise, they were required to have signed the informed consent and assent forms. Incomplete data across the variables was established as the exclusion criterion. Data analysis was performed using Statgraphics version 16 software. Descriptive statistics were utilized, and variable comparisons were conducted through Odds Ratio (OR), X^2 tests, and a 95% Confidence Interval (CI).

RESULTS

For the present study, a survey was administered to a total of 331 adolescent students between 14 and 18 years of age belonging to a higher education institution in the city of Barranquilla. During the data collection process, no significant losses or participant exclusions based on previously established criteria were reported.

Table 1.

Psychoactive Substance Use

Consumption	Frequency	Percentage
No	263	79.46%
Yes	68	20.54%
TOTAL	331	100%

Source: Survey database collected. Of the studied population (331), 20.54% (68 adolescents) consume psychoactive substances.

Table 2.

Socioeconomic Stratum

Stratum	Frequency	Percentage	Frequency
1	125	37.76%	
2	96	29.00%	
3	66	19.94%	
4	34	10.27%	
5	6	1.81%	
6	1	0.30%	
No response	3	0.91%	
Total	331	100%	

Source: Survey database collected.

Out of the total respondents, 125 students belong to stratum 1 (37.76%), followed by 96 belonging to stratum 2 (29.00%), which were the most frequent. Strata 5 and 6

represented only 2% of the population.

Table 3.
Influence of Violence on Psychoactive Substance Use

Influence of Violence	Psychoactive Substance Use		Row Total
	YES	NO	
Yes	13 40.63%	19 59.38%	32 9.67%
No	55 18.39%	244 81.61%	299 90.33%
Column Total	68 20.54%	263 79.46%	331 100.00%
Statistics	multicolumn31 $X^2 = 8.751$; $p = 0.0031$; OR = 3.035; 95% CI: 1.414 – 6.515		

Source: Survey database collected.

A statistically significant association was found between having experienced violence and the use of psychoactive substances ($X^2 = 8.751$; $p = 0.0031$). Students who reported a history of violence were approximately 3 times more likely to consume psychoactive substances compared to those who did not report violence (OR = 3.035; 95% CI: 1.414 – 6.515). This suggests that exposure to violent situations could be a significant risk factor associated with consumption in this population.

Table 4.
Association Between Type of Violence and Psychoactive Substance Use

Type of Violence	Psychoactive Substance Use		Row Total
	YES	NO	
None	56 18.67%	244 81.33%	300 90.63%
Physical	4 28.57%	10 71.43%	14 4.23%
Psychological	6 46.15%	7 53.85%	13 3.93%
Sexual	2 50.00%	2 50.00%	4 1.21%
Column Total	68 20.54%	263 79.46%	331 100.00%

$$\chi^2 = 8,550; p = 0,0359$$

Source: Survey database collected.

A statistically significant association was found between the type of violence and the consumption of psychoactive substances ($\chi^2 = 8.550$; $p = 0.0359$). Students who reported having experienced physical violence (OR = 1.734), psychological violence (OR = 3.735), or sexual violence (OR = 4.357) showed a higher probability of consuming psychoactive substances compared to those who did not report violence, suggesting that these experiences may be relevant risk factors for consumption. Within the total studied population, among the students who do consume, 14.8% (49) stated

that social influence was not a risk factor, 5.74% (19) stated that it did influence the initiation of consumption, and 0.30% (1) felt that social media and emotional stress were influential factors in their consumption. Of the total respondents, 263 students (79.46%) have not consumed psychoactive substances, while 43 respondents (12.99%) began consumption between the ages of 16 and 18.

DISCUSSION

The present study provides an updated perspective on psychoactive substance use among school-aged adolescents between 14 and 18 years old at a higher education institution in Barranquilla, Colombia. The findings indicate that 20.54% of respondents reported having consumed psychoactive substances, which aligns with global and national epidemiological trends indicating a progressive increase in prevalence among adolescents. According to the WHO, approximately 450,000 people died due to drugs in 2015. Of these deaths, 167,750 were directly related to drug addiction disorders (mostly overdoses). The remaining deaths may have been indirectly related to drug abuse, including unsafe injection practices associated with HIV and Hepatitis C viruses (Mendoza, 2019). This figure, while concerning, highlights that a majority (79.46%) do not consume, which should also be considered an opportunity to strengthen protective factors.

Regarding sociodemographic characteristics, the largest proportion of surveyed adolescents belongs to socioeconomic strata 1 and 2 (66.76%), suggesting a possible relationship between unfavorable economic conditions and the onset of consumption. However, the independence test between socioeconomic stratum and consumption did not show a statistically significant association ($p = 0.1029$), implying that while a trend may exist, it is not conclusive in this sample. This finding aligns with studies such as "A Review of Psychosocial Factors Linked to Adolescent Substance Use," which based their findings on ecological approaches evidencing how the consumption of alcohol, tobacco, and marijuana is influenced by peers, family, school, and neighborhood, rather than by socioeconomic level in isolation (Trucco, 2020). Therefore, it can be inferred that psychoactive substance use in adolescents does not respond exclusively to economic factors but to a complex interaction of psychological, familial, social, and cultural aspects.

One of the most relevant findings of the study was the significant association between exposure to violence and psychoactive substance use ($p = 0.0031$), particularly in cases of psychological violence (OR = 3.735; 95% CI: 1.208–11.54). This reinforces the hypothesis that early adverse experiences, such as instances of abuse, may increase vulnerability to consumption as a dysfunctional coping mechanism. Lawrence highlights how depressive symptoms mediate the relationship between family violence and alcohol/drug use in adolescents, with gender-differentiated effects, and coincides with the present study in identifying a comorbidity between psychoactive substance use and mental health disorders, such as depression and anxiety, particularly in adolescents (Lawrence, 2022).

Notably, the analysis by type of violence revealed that sexual violence, although less prevalent in the sample, presents an Odds Ratio (OR) of 4.357 with a 95% confidence interval between 0.6008 and 31.6. This data, combined with a significant p-value ($p = 0.0359$), suggests a significant relationship between having suffered sexual violence and the consumption of psychoactive substances. Although the sample of reported cases was limited, the proportional impact is high, evidencing the profound effect of this type of aggression on the mental and behavioral health of adolescents. Various studies, such as "Domestic violence and risk of internalizing and externalizing problems in adolescents

living with relatives with substance use disorders" (Journal of the Brazilian Psychiatric Society, 2020), agree on the association between exposure to domestic violence, emotional problems, and substance use in adolescents; they further note that sexual violence in adolescence is associated with a higher incidence of risk behaviors, including substance use as a form of escape, emotional regulation, or psychological dissociation (Thaís, 2020). This finding underscores the need for differential and trauma-sensitive approaches within prevention and treatment programs.

Regarding social factors, although only 5.74% of the adolescents surveyed in this study reported that their consumption of psychoactive substances was motivated by the influence of peers, social networks, or family members, peer pressure was the most frequently mentioned motive within this category. This finding relates to the propositions of Borst, who in a recent experimental study concludes that the desire for peer group acceptance acts as a strong predictor in the decision to consume substances during adolescence (Borst, 2024). Although this variable did not reach statistical significance in the current analysis, its presence as a self-reported motive and its support in specialized literature indicate that it must be considered when designing preventive strategies. Psychosocial models of adolescent development agree that the peer group exerts a decisive influence on risk behaviors; therefore, it is essential to address these environments in educational and community interventions.

Another important aspect of the present study is the age of onset of consumption, which was concentrated between 16 and 18 years, coinciding with the stage of secondary education and increased exposure to risk environments. This finding aligns with recent results, such as those of Lee and Henry (2022), who demonstrated that a high level of school engagement at early ages (12–14 years) is associated with lower levels of alcohol and cannabis use between ages 15 and 18, evidencing the preventive potential of early interventions (Lee, 2022). Likewise, a latent class analysis conducted by a Spanish team found that young people who begin consumption after age 16 exhibit better psychosocial functioning than those who start earlier, underscoring the importance of delaying the onset of use to improve outcomes (Hyanghee, 2024). These studies emphasize the need to strengthen preventive strategies within basic secondary education before reaching the risk peaks associated with the transition to a more autonomous environment. Implementing school programs focused on academic commitment, socio-emotional skills, and the design of protective environments from the early years could be key to delaying the age of onset and reducing the impact of consumption on adolescent development.

The results obtained evidence that psychoactive substance use in adolescents is a multifactorial phenomenon linked to individual and social variables. The identification of associated factors, such as violence, social environment, and psychiatric history, should guide the formulation of early, contextualized interventions involving families, educational institutions, and the healthcare sector. This study contributes to the understanding of a global problem, highlighting the urgency of comprehensive preventive approaches from the perspectives of pediatrics and public health.

It is important to acknowledge certain methodological and contextual limitations. First, the cross-sectional design precludes establishing causal relationships between variables, as it only allows for the identification of associations at a specific point in time. Furthermore, it should be noted that while sociodemographic, psychological, and social variables were included, standardized clinical measures to evaluate mental health were not incorporated.

CONCLUSIONS

This study demonstrated that, among the associated factors, a statistically significant relationship exists between psychoactive substance use and exposure to phenomena of violence, particularly of a psychological and sexual nature, where affected students presented up to a three-fold increase in the probability of consumption. In contrast, variables such as socioeconomic status, family structure, or household type did not show a significant association, suggesting that consumption is not explained exclusively by economic or familial factors, but rather by the interaction of complex emotional and social experiences. These results highlight the need to implement prevention strategies that prioritize mental health, early detection of violence, and the strengthening of safe school and family environments, moving beyond traditional approaches focused solely on socioeconomic levels.

The results underscore the importance of creating safe spaces, emotional support strategies, and early detection and intervention mechanisms within the educational and public health sectors. This study aims to serve as a tool for action, motivating institutions, professionals, and policymakers to design and implement programs that prevent consumption through an empathetic, informed, and adolescent-centered lens. Ultimately, understanding the realities of young people through their own experiences allows us to make their needs visible, listen to their silences, and transform data into decisions. Only through this approach can we intervene effectively, opportunely, and humanely in the face of a health problem that continues to grow and challenges us as a society.

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