

# Lifetime prevalence of drugs use in adolescents from Cartagena, Colombia

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### Abstract

**Objective.** To estimate the prevalence of lifetime use of psychoactive drugs in adolescents from Cartagena, Colombia. **Methodology.** Cross-sectional study carried out with a representative sample of 244 adolescents between 13 and 17 years of age from the general population. The study inquired on use of psychoactive drugs at any time of their lives (cocaine, ecstasy, inhalants, marijuana, or any drug that can be injected). The explanatory variables were adjusted through logistic regression. **Results.** Participants were from low and middle socio-economic levels. The lifetime prevalence of use of any drug was 20%. A total of 19% of the participants reported daily cigarette use and 18% had risky alcohol use. The following risk factors were related to drug use some time in their lives: daily cigarette use (OR=30.2; CI<sub>95%</sub>=11.8-77.6), not being religious (OR=5.8; CI<sub>95%</sub>=1.8-18.8), male gender (OR=3.7; CI<sub>95%</sub>=1.1-13.1), and risky alcohol use (OR=3.5; CI<sub>95%</sub>=1.2-9.8). **Conclusion.** Use of any illegal drug some time in their lives by adolescents is high, constituting a healthcare problem, which should be addressed by government organizations. This use was related to male gender, not being religious, cigarette smoking, and having risky alcohol use.

**Key Words:** substance-related disorders; adolescent; students; cross-sectional studies.

## Prevalencia de vida de consumo de sustancias psicoactivas en adolescentes de Cartagena, Colombia

### Resumen

**Objetivo.** Estimar la prevalencia de vida de consumo de sustancias psicoactivas en adolescentes de Cartagena, Colombia. **Metodología.** Estudio de corte transversal realizado en una muestra representativa de 244 adolescentes entre 13 y 17 años. Se indagó sobre el consumo alguna vez en la vida de sustancias psicoactivas (cocaína, éxtasis, inhalantes, marihuana o alguna

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inyectable). Mediante regresión logística se ajustaron las variables explicatorias. **Resultados.** Los participantes pertenecían a los estratos socioeconómicos bajo y medio. La prevalencia de vida de consumo de alguna sustancia fue de 20%. El 19% informó consumo diario de cigarrillo y 18% tenía consumo problemático de alcohol. Se relacionaron con el consumo de sustancias alguna vez en la vida los factores de riesgo: consumo diario de cigarrillo (OR=30.2; IC<sub>95%</sub>=11.8-77.6), no ser religioso (OR=5.8; IC<sub>95%</sub>=1.8-18.8), sexo masculino (OR=3.7; IC<sub>95%</sub>=1.1-13.1) y consumo problemático de alcohol (OR=3.5; IC<sub>95%</sub>=1.2-9.8). **Conclusión.** El consumo de alguna sustancia psicoactiva por parte de los adolescentes es alto, constituyendo un problema de salud al cual deben prestar atención los organismos gubernamentales. Este consumo se relacionó con variable como el sexo (masculino), no ser religioso, ser fumador y tener consumo problemático de alcohol.

**Palabras clave:** trastornos relacionados con sustancias; adolescente; estudiantes; estudios transversales.

## Prevalência de vida de consumo de substâncias em adolescentes de Cartagena, Colômbia

### ■ Resumo ■

**Objetivo.** Estimar a prevalência de vida de consumo de substâncias psicoativas em adolescentes de Cartagena, Colômbia. **Metodologia.** Estudo de corte transversal realizado numa mostra representativa de 244 adolescentes entre 13 e 17 anos de população geral. Indagou-se sobre o consumo alguma vez na vida de substâncias psicoativas (cocaína, êxtase, inalantes, maconha ou alguma injetável). Mediante regressão logística se ajustaram as variáveis explicatorias. **Resultados.** Os participantes foram dos estratos socioeconômicos baixo e meio. A prevalência de vida de consumo de alguma substância foi de 20%. O 19% informou consumo diário de cigarro e 18% tinha consumo problemático de álcool. Relacionaram-se com o consumo de substâncias alguma vez na vida os fatores de risco: consumo diário de cigarro (OR=30.2; IC<sub>95%</sub>=11.8-77.6), não ser religioso (OR=5.8; IC<sub>95%</sub>=1.8-18.8), sexo masculino (OR=3.7; IC<sub>95%</sub>=1.1-13.1) e consumo problemático de álcool (OR=3.5; IC<sub>95%</sub>=1.2-9.8). **Conclusão.** O consumo de alguma substância ilegal alguma vez na vida de substâncias ilegais dos adolescentes é alto, constituindo um problema de saúde ao qual devem prestar atendimento os organismos governamentais. Este consumo se relacionou com o sexo masculino, não religiosos, ser fumante e ter consumo problemático de álcool.

**Palavras chave:** transtornos relacionados ao uso de substâncias; adolescente; estudos transversais.

## Introduction

Experimentation or drug use some time during their lives keep an important relation with the prevalence of habitual use during adolescence and adult life.<sup>1</sup> Experimental drug use during adolescence can represent one of the occasional risk behaviors of this stage of the vital cycle or constitute the formal onset of sustained and lasting use.<sup>2</sup> However, given that the course followed by experimenting with drugs is unknown, the most indicated action is active prevention of the onset.

Within this process, nursing personnel play a relevant role in different healthcare contexts.<sup>3</sup> The frequency of use of some illegal drug during adolescence varies significantly according to the characteristics of the population being studied and the number of drugs being inquired. Most studies available in Colombia reported on the lifetime prevalence of drug use based on samples of school-attending adolescents.<sup>4-7</sup> Martínez-Mantilla *et al.*,<sup>4</sup> reported that 13.7% of the

students from vocational schools in Bucaramanga experimented with one illegal drug; while Rueda-Jaime *et al.*,<sup>5</sup> documented a prevalence of 4.6% in students from basic secondary and middle vocational school. Zárate *et al.*,<sup>6</sup> found that 5.0% of the students from all grades in Pamplona referred to some drug use during their lives; furthermore, Campo-Arias *et al.*,<sup>7</sup> found that 10.4% of the students from sixth to eleventh grade in a public school in Cartagena (Colombia) reported use of some illegal drug.

Regarding the risk factors associated to use of illegal drugs some time in their lives, these vary in the different investigations.<sup>4-10</sup> For example, it has been observed that drug use is more frequent in males,<sup>6-8</sup> in adolescents residing in low socio-economic levels<sup>8</sup>, and in those reporting daily cigarette or alcohol use.<sup>9</sup> To date, drug use some time in their lives had not been investigated in adolescents from the general population of Cartagena. This information will permit knowing the dimension of experimentation outside the school context and will permit designing prevention strategies that take into account the associated factors.

The aim of this research was to estimate the lifetime prevalence of psychoactive drug use in adolescents from low and middle socio-economic levels in Cartagena, Colombia.

## Methodology

A cross-sectional study was designed with adolescents from the general population in the city of Cartagena, Bolívar, during 2010. The study was approved by the Research Ethics Committee at Universidad de Cartagena. The parents or legal guardians of students under the age of consent signed the informed consent. Additionally, the students assented to participate, according to the norms for health research in Colombia.

A sample was calculated from 246 participants between 13 and 17 years of age for an expected prevalence of 20% of drug use at some point

during their lives. The margin of error was 5% and the confidence level was 95%.

In the classroom, students filled out a questionnaire inquiring on the demographic characteristics and on the lifetime use of cocaine, ecstasy, inhalants (glue), marihuana, or some injected psychoactive drug. The questionnaire also included scales to quantify depressive symptoms (WHO-5),<sup>11</sup> self-esteem (Rosember test),<sup>12</sup> attitude regarding Christianity (Francis-5),<sup>13</sup> family functioning (APGAR),<sup>14</sup> and risky alcohol use (CAGE).<sup>15</sup>

The WHO-5 is a 5-item instrument with four response options scored from zero to three. The total score below six suggests clinically important depressive symptoms.<sup>11</sup> This instrument showed high reliability and validity in adolescents from Cartagena, Colombia.<sup>16</sup> The Rosenberg scale to quantify self-esteem is comprised of 10 points with YES/NO answers. The total score of seven or less indicates low self-esteem.<sup>12</sup> This scale has been evaluated with acceptable reliability and validity in a population of adolescent students in Cartagena.<sup>16</sup> The Francis-5 scale estimates the attitude regarding Christianity (God, Jesus, and prayer). This instrument includes five questions with an equal number of response options, scored from zero to four. Scores of 18 or less classify the person as non-religious.<sup>13</sup> This scale also obtained high reliability and validity when tested in adolescent students in Cartagena.<sup>13-17</sup> The APGAR family questionnaire is used to explore family functioning. The five-point questionnaire was used with three response options scored from zero to two. Scores of seven or less indicate family dysfunction.<sup>14</sup> This questionnaire showed excellent reliability and validity during an investigation with students from Bucaramanga, Colombia.<sup>18</sup> The CAGE questionnaire is used to identify risky alcohol use during the last six months. The questionnaire is comprised by four items with YES/NO response options. An affirmative response to two or more points indicates risky alcohol use.<sup>15</sup> The CAGE revealed acceptable reliability and validity in a study with adolescents from a public school in Cartagena.<sup>19</sup>

A descriptive analysis was performed of the information collected. The variables were dichotomized for bivariate analysis and the Odds Ratios (OR) was calculated with their 95% confidence

intervals (CI<sub>95%</sub>). The Hosmer-Lemeshow goodness of fit was calculated for the final model; a p value > 0.10 was expected. The internal consistency of the scales was estimated with Cronbach's alpha coefficient. Calculations were run on the STATA 9.0 statistical program.

## Results

A total of 244 adolescents between 13 and 17 years of age participated. The general characteristics of those surveyed were as follows: mean age 15.6±1.3 years (60.7% were 16 years or older), 68.4% were male, 72.5% had incomplete high school or less, 67.2% resided in neighborhoods with socio-economic levels one to three, and 62.7% were not religious and reported clinically important depressive symptoms. The internal consistency of the instruments used in this study was 0.78 in WHO-5, 0.93 for Francis-5, 0.83 in the APGAR, 0.63 for the CAGE questionnaire, and 0.68 for the Rosenberg scale.

Regarding frequencies of exposure to risk factors for use of psychoactive drugs in the group

investigated, 18.9% were current smokers (CI<sub>95%</sub>=14.4-24.3%), 18.4% had risky alcohol use (CI<sub>95%</sub>=14.0-23.8%), 49.1% came from dysfunctional families (CI<sub>95%</sub>=42.9-55.4%), 35.7% had low self-esteem (CI<sub>95%</sub>=29.9-41.9%), and 59.4% had clinically important depressive symptoms (CI<sub>95%</sub>=53.2-65.4%).

A total of 20.1% of the participants reported use of some illegal drug at any time of their lives (CI<sub>95%</sub>=15.1-25.1). Table 1 shows the associations between the risk factors studied and having used illegal psychoactive drugs during their lives. Except for the variables for age and clinically important depressive symptoms, significant differences were found in the rest of the risk factors considered by this study. The following variables behaved as high risk factors for lifetime use of illegal psychoactive drugs: currently smoking (OR=41.8), not being religious (OR=6.9), male gender (5.2), and risky alcohol use (4.1). Family dysfunction was shown as a moderate risk factor (2.3) and the low socio-economic level was a low risk factor for the event studied (1.2).

Table 2 shows that in the multivariate model, importance was verified of four of the seven risk factors related in the bivariate analysis with the risk of having used illegal drugs during some

**Table 1.** Strength of association between the risk factors studied and the lifetime use of illegal psychoactive drugs in adolescents between 11 and 17 years of age in Cartagena, Colombia

Risk factor	OR	CI <sub>95%</sub> OR	p
Age: ≤15 / ≥16 years	1.8	0.9-3.6	0.60
Gender: male / female	5.2	2.0-13.6	<0.01
Secondary education: incomplete or less / complete	1.2	0.6-2.5	0.60
Socio-economic level ≤ 2 / ≥3	1.2	1.3-6.8	<0.01
Not religious/ religious	6.9	2.6-18.3	<0.01
Current smoker (Yes/No)	41.8	17.6-99.7	<0.01
Risky alcohol use (Yes/No)	4.1	2.0-8.4	<0.01
Low self-esteem (Yes/No)	3.4	1.8-6.5	<0.01
Clinically important depressive symptoms (Yes/No)	0.7	0.4-1.2	0.18
Family dysfunction (Yes/No)	2.3	1.2-4.4	0.01

point of their lives. This revealed that, although the strength of association diminishes, the following

risk factors continue being high: cigarette use, not being religious, male gender, and risky alcohol use.

**Table 2.** Logistic regression model for the use of some illegal drug in adolescents between 13 and 17 years of age in Cartagena, Colombia

Variable	OR	CI <sub>95%</sub>	p
Daily smoker (Yes/No)	30.2	11.8-77.6	<0.01
Not religious / religious	5.8	1.8-18.8	<0.01
Male / female gender	3.7	1.1-13.1	0.04
Risky alcohol use (Yes/No)	3.5	1.2-9.8	0.02

Hosmer-Lemeshow test = 6.6, degrees of freedom = 8, p = 0.36

## Discussion

This study noted a 20% prevalence of lifetime use of illegal drugs, higher than the prevalence documented in Colombian students attending schools (between 4 and 18%).<sup>4-6,20</sup> This may be related to the characteristics of the study sample, which included adolescents attending schools and not attending schools. The investigations consistently indicated that adolescents that not attending schools have a higher risk of drug use and other behaviors that can deteriorate the health status. It is important to highlight the association between daily cigarette use, risky alcohol use, and use of illegal drugs some time in their lives, consistent with other previous studies.<sup>2-7,21</sup> Legal drugs like alcohol and cigarettes are frequently the gateway to illegal drug use,<sup>22</sup> and their use during adolescence is related to increased risk of their later use, in addition to increasing the possibilities of starting the use of other drugs like marijuana and cocaine among others.

Regarding the association and the attitude toward religion, this study<sup>23</sup> found that less religious youth had higher probability of using illegal drugs. These data agree with those reported in another study,<sup>24</sup> which holds that the factors related to religiosity are significantly associated to legal and

illegal drug use. Youth with religious participation tended to associate with peers who had low levels of use, which is also related to lower individual propensity to said behaviors.

Each of the risk factors analyzed herein must be considered upon designing interventions to prevent and control use of legal and illegal drugs; prevention can be facilitated by the presence of protective factors in the lives of individuals, which seem to influence on the use of different drugs, the family structure, religiosity, among others.<sup>25,26</sup> These interventions must be comprehensive and multidimensional.

Nursing professionals play an important role in preventing, identifying, and monitoring adolescents who use legal and illegal drugs, by actively leading and participating in prevention, and educational interventions and in promoting healthy behaviors.<sup>3</sup> Stemming from the diagnoses of drug use in a general population of adolescents offers nursing professionals information that guides their care from the social and cultural diversity, which is quite necessary in a country like Colombia with notable multiethnic and multicultural wealth.<sup>27,28</sup> To provide satisfactory

care, nursing must adjust cognitively to cultural values, beliefs, and ways of life of individuals.<sup>29</sup> This gains importance when working with adolescents, which requires views that generate substantial changes in their practices and life styles of this age group.

This study provides preliminary data upon exploring illegal drug use in adolescents from the general community. However, it presents the limitations of a cross-sectional study with a relatively small sample for analysis.<sup>30</sup> It is necessary to investigate drug use with a bigger sample of adolescents including participants residing in high socio-economic levels.

The conclusion from this study is that for adolescents the use of any illegal drug at some time during their lives is high, constituting a healthcare problem that needs to be addressed by government organizations. This use was related to male gender, non-religiosity, current smokers, and engaging in risky alcohol use.

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