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DRUG USE AMONG MEDICINE STUDENTS OF A UNIVERSITY IN URUGUAY AND ITS RELATIONSHIP WITH EXPERIENCES OF MALTREATMENT DURING CHILDHOOD AND ADOLESCENCE

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ABSTRACT: This study aimed to estimate the prevalence of the use and abuse of psychoactive substances among students and its relationship to adverse experiences during childhood and adolescence. This exploratory and observational, research was based on the self-report. The sample consisted of 280 college students. The reported lifetime prevalence of psychoactive substance use was 72.1%. The three most commonly used psychoactive substances in the last year were alcohol (66.4%), marijuana (25.0%) and tobacco (32.1%). Peer drug abuse was reported in 33.9% of the students. The physical and psychological maltreatment were the most frequently reported categories. Students who reported having peers who abuse psychoactive substances have a 7-fold increased likelihood to abusing drugs than other respondents. There were no statistically significant associations (<0.005) between maltreatment self-reported in any of its categories and the use or abuse.

DESCRIPTORS: Maltreatment. Drugs use and abuse. University students.

USO DE DROGAS EM ESTUDANTES DE MEDICINA E SUA RELAÇÃO COM EXPERIÊNCIAS DE MAUS TRATOS DURANTE A INFÂNCIA E A ADOLESCÊNCIA NO URUGUAY

RESUMO: Avaliar a prevalência do uso e abuso de substâncias psicoativas entre estudantes e sua relação com experiências adversas na infância e na adolescência em uma investigação de tipo exploratório, transversal, observacional, com base na autoavaliação en 280 estudantes universitários. A porcentagem de estudantes que relatou o uso de substâncias foi de 72,1%. As três substâncias psicoativas mais utilizados no último ano foram álcool (24,3%), maconha (19,3%) e fumo (16,4%). 33,9% dos alunos relataram que seus colegas estavam abusando substâncias. O abuso físico e psicológico foram as categorias mais frequentemente relatados. Os estudantes que relataram ter colegas que abusaram de substâncias psicoativas apresentaram uma probabilidade sete vezes maior para o abuso de drogas do que outros entrevistados. Nenhuma associação estatisticamente significativa (<0,005) entre o abuso de autorrelatado em qualquer de suas categorias e o uso ou abuso de drogas foram encontrados.

DESCRITORES: Maus-tratos. Uso e abuso de drogas. Estudantes universitários.

USO DE DROGAS EN ESTUDIANTES DE MEDICINA Y SU RELACIÓN CON EXPERIENCIAS DE MALTRATO DURANTE LA INFANCIA Y ADOLESCENCIA EN URUGUAY

RESUMEN: Se evaluó la prevalencia del uso y abuso de sustancias psicoactivas en los estudiantes y su relación con las experiencias adversas durante la infancia y la adolescencia en una investigación de tipo exploratorio, transversal, observacional, basada en el autoreporte de 280 estudiantes universitarios. El consumo reportado de sustancias psicoactivas fue del 72.1%. Las tres sustancias psicoactivas más frecuentemente utilizadas en el último año fueron el alcohol (24.3%), la marihuana (19.3%) y el tabaco (16.4%). Un 33.9% de los estudiantes refirieron que sus pares abusaban de sustancias. El maltrato físico y el psicológico fueron las categorías más frecuentemente reportadas. Los estudiantes que afirmaron tener pares que abusaban de sustancias psicoactivas presentaron una probabilidad siete veces mayor de abusar de drogas que el resto de los encuestados. No se encontraron asociaciones estadísticamente significativas (< 0.005) entre el reporte de maltrato en ninguna de sus categorías, y el uso o abuso de drogas.

DESCRIPTORES: Maltrato. Uso y abuso de drogas. Estudiantes universitarios.

INTRODUCTION

Education practices can be socially perceived or created according to prevailing paradigms and to values that are accepted by society or a group at a given moment. This perception is supported by a system of beliefs that may legitimize some violent practices of adults toward children as a means of imposing limits. In this complex process of collective creation, we should consider the ethical evolution of society in the search for human dignity and guarantee the protection of human rights.

In Uruguay, available data show a high prevalence of maltreatment during childhood and adolescence,[1] in such a way that we can say that this practice is widespread and established. Some studies have found a relationship between exposure to maltreatment during childhood and adolescence and the use, or more specifically the abuse, of psychoactive substances.[2-4]

From a harm-reduction perspective, it is important to conduct studies that allow for the identification of consumption patterns, and of risks or protective factors, in order to understand the actual situation and focus on health promotion.

National surveys show that alcohol is the most consumed psychoactive drug by young individuals over a 12-month period, with a prevalence of up to 74% in some age groups.[5]

Objective: to assess the prevalence of use and abuse of psychoactive substances in students and its relationship with adverse experiences during childhood and adolescence.

METHOD

This is an exploratory, cross-sectional, and observational study based on retrospective reports. Interviews were carried out with 280 students in the first two years of the School of Medicine in a university in Uruguay. A non-probabilistic sampling technique was applied, in which a group draw was made from the courses concerned. The inclusion criteria were: to be a student of the university; to be enrolled in the selected courses; and to be aged over 18. A questionnaire composed of 60 questions was used as a data collection instrument. An average of 12 minutes was necessary to answer the questionnaire. Adverse experiences during childhood and adolescence were assessed by means of the Adverse Childhood Experiences (ACE) instrument, and psychological distress was assessed with the Kessler Scale.4 Questions from CICAD/OEA questionnaires were adapted in order to assess the use and abuse of drugs by students and their peers.

For the study design, statistics, and database analysis, the Statistical Package for the Social Sciences (SPSS) version 1.5 was used. The analysis of variables included a descriptive analysis, absolute and relative frequencies, and measures of central tendency. To evaluate the relationship between the considered variables, contingency tables, and the chi-square test were used. Relationships were considered statistically significant where $p<0.05$.

In order to carry out this investigation, we submitted it to the Research Ethics Board of the Centre for Addiction and Mental Health (CAMH) and to the university ethics committee for approval. The approval of the Faculty Council, the Scientific Research Commission, and the Commission of Higher Education was also granted.

Participation in the study was on a voluntary basis, and a free and informed consent

form was distributed to students for signing beforehand. Data collection was conducted in classrooms, before which the main researcher, together with the team, explained the objectives of the study and its importance; inclusion criteria and free participation of students were made clear. Then the free and informed consent forms were handed to students and, once they signed and agreed to participate, the forms were saved so that we could carry on with the questionnaires. Free and informed consent forms and questionnaires were stored in different rooms so as to ensure confidentiality.

RESULTS

Sociodemographic

Of the total number of students surveyed, 205 (73.2%) were women and 75 (26.8%) were men. This corresponds to a male-female ratio of 0.37, that is, four men to every ten women. The average age at which they had begun consumption of psychoactive substances was 15.5 years old. With respect to the socioeconomic level reported by students, and according to their distribution in the different categories (Table 1), 92.7% stated they were of medium or medium-high socioeconomic status, and 4.7% reported a low or medium-low status.

Regarding the education level of parents, mothers who completed higher education were at 29.4%, whereas the percentage of fathers who did so was 27%. Those who did not complete higher education were 1.4% of mothers and 2.6% of fathers.

As for the place of origin, most students (258; 92.1%) reported having been raised in an urban area and 22 (7.9%) in a rural area.

Table 1 - Distribution of sociodemographic characteristics of medical students from first and second years. Uruguay, 2011

Variable	Category	n	%
Gender	Male	75	26,8
	Female	205	73,2
Socioeconomic status	Low	2	0,7
	Medium low	11	4
	Medium	206	75,7
	Medium high	49	18
	High	4	1,5
Education level of the father	Primary complete	89	32,5
	Secondary complete	104	38
	Higher complete	74	27
	No formal education	7	2,6
Education level of the mother	Primary complete	73	26,2
	Secondary complete	120	43
	Higher complete	82	29,4
	No formal education	4	1,4
Place where they spent childhood	Rural area	22	7,9
	Urban area	258	92,1
Importance of religious practice and belief	Very important	29	10,4
	Important	70	25,1
	Fairly important	94	33,7
	Not important	86	30,8

Psychological distress

Data obtained with the Kessler Scale (K10), which was used to value psychological distress, showed that 81.1% of students had mild to moderate levels of psychological distress, while 18.8% had high or very high levels. There are no national studies on the valuation of psychological distress with which to compare our findings.

Use and abuse of psychoactive substances

Results obtained for the consumption of psychoactive drugs show that 72.1% of individuals

had consumed some psychoactive substance in the course of their lives. According to data obtained from this population, the four most consumed drugs were alcohol, tobacco, cannabis, and cocaine. These results coincide with the findings of national surveys, as explained in the Discussion section.

The three most frequently used drugs in the last year were alcohol (24.3%), marijuana (19.3%), and tobacco (16.4%), while 5.1% of students admitted having used other substances (cocaine, ecstasy, and heroin). When we compare the consumption frequency in the last 30 days we see that alcohol remains in the first place (53.9%), but this time followed by tobacco (22.1%), with marijuana in third place (10%).

Data on consumption of ecstasy, heroin, and inhalants show a low consumption rate. Nine point three percent of students responded affirmatively to questions that allow us to assert their inability to commit to responsibilities at home, in the workplace, or to studies as being in the category of abuse. The minimum value corresponded to items that assessed legal problems resulting from drug use (3.9%). One point one percent of individuals surveyed reported having received professional psychological support due to drug use.

Table 2 - Distribution of students by gender and drug abuse. Uruguay, 2011

Drug abuse	Male	Female	Total
No	52	180	232
Yes	22	25	47
Totals	74	205	279

If we analyze drug abuse by gender (Table 2), the data obtained bring to light a "masculinization" of drug abuse among this population. Of a total of 74 men, there were 22 cases of abuse, which represents approximately one in three. Among women, of a total of 205 individuals, abuse was reported in 25 cases, that is, one in eight.

The most-used licit or illicit psychoactive drugs by friends were, in order of frequency: alcohol; tobacco; and cannabis, both in the last 12 months and in the last 30 days. The use of ecstasy, heroin, inhalants, and other substances such as LSD can be considered a marginal phenomenon.

Adverse situations and maltreatment during childhood and adolescence

According to the retrospective report of students, it was found that 12.1% suffered from psychological distress, 17.5% had been physically abused, and 1.4% had been sexually abused. As for abandonment, 3.9% suffered from moderate to severe physical abandonment and 5.6% suffered from moderate to severe psychological abandonment.

Regarding the results of family dysfunction during childhood and adolescence, 20.7% responded affirmatively when asked about drug abuse at home; 33.9% reported divorce or separation of parents; 27.1% reported a mental illness in the family; and 8.2% reported maltreatment or violence against their mother or caregiver. About 5% of students had received professional psychological support for situations of maltreatment during childhood or adolescence.

Relationship between maltreatment during childhood and adolescence and the use or abuse of psychoactive drugs

The number of students who made use of drugs was 202, which corresponds to 72.1% of the total number surveyed. Most of these individuals (72.7%) reported not having suffered from abandonment to any extent, whereas the remainder, 12.9%, reported physical abuse to some extent. Slight, moderate, and severe abandonment was found in 9.4%, 2%, and 1.5% respectively. In the relationship between the use of psychoactive drugs and psychological abandonment, 69.6% of those who had used drugs at least once reported no psychological abandonment, whereas the remaining 25.3% responded affirmatively. Slight, moderate, and severe abandonment was found in 19.8%, 2%, and 3.5% respectively. The relationship between abandonment and the use of drugs was not statistically significant.

If we analyze the prevalence of the use of drugs in relation to psychological abuse, 73.5% of the 34 students who reported maltreatment stated that they had used drugs, while the remaining 26.5% denied having done so. In the case of prevalence of use related to physical abuse, 73.5% of the 49 students who reported having suffered physical abuse used drugs, whereas the remaining 26.5% denied having done so. Finally, there were four cases of drug use in situations where sexual abuse was reported, of which only two reported abuse of drugs.

When the misuse of psychoactive drugs and

the different types of abuse—emotional, physical, and sexual—are correlated, it is not possible to rule out a null hypothesis and, therefore, with a significance level of 0.05, it is possible to assert that there is no statistically significant relationship between drug abuse and different types of maltreatment in the population studied (Table 3).

After an analysis of prevalence of drug abuse regarding the peers of students surveyed, it was found that 72.3% of the 47 students who reported abuse stated that there are conducts associated with abuse among peers, while the remaining 27.7% denied this. Although the number of students (n=47) who reported abuse of drugs is small, and this limits the appreciation of relationships between the variables analyzed so far, a statistically significant association was found between drug abuse by surveyed individuals and by peers.

Table 3 - Test Chi-cuadrado de Pearson para el uso y abuso de sustancias psicoactivas en relación a las distintas categorías de maltrato. Uruguay, 2011

Independent variable of abuse	Pearson's chi-square	Asymptotic sig. (bilateral) X^2	Correction for continuity	Asymptotic sig. (bilateral) by correction	Gl
Use of drugs					
Psychological	0.037	0.847	0.000	1.000	1
Physical	0,052	0.820	0.03	0.958	1
Sexual	0.990	0.320	0.188	0.346	1
Physical abandonment	0,540	0.910			3
Psychological abandonment	4.749	0.191			3
Drug abuse					
Psychological	1.462	0.227	0.924	0.336	1
Physical	4.338	0.037	3.500	0.061	1
Sexual	0.822	0.365	0.055	0.815	1
Physical abandonment	6.522	0.089			3
Psychological abandonment	4.795	0.187			3

After conducting the chi-square test to analyze the relationship between the variables of psychoactive drug use and the different types of abuse—emotional, physical, and sexual—the results found in Table 3 show that it is not possible to rule out a null hypothesis and, therefore, with a significance level of 0.05, it is possible to assert that there is no statistically significant relationship between drug use or abuse and the different types of maltreatment in the population studied.

DISCUSSION

Two complex phenomena that have an impact on collective health are analyzed and related in this study. This is the first study in Uruguay that aims to analyze the use of psychoactive drugs by young individuals and its possible relationship with exposure to adverse situations and maltreatment during childhood and adolescence. The prevailing culture is a relevant factor to be taken into account for the analysis. The way children and adolescents are raised, as well as consumer standards within a society or community, are nothing but cultural construct that are dynamic and changing over time; they depend on prevailing values and are related to the collective social and political processes of a specific group. In this regard, we would like to highlight that this study aims to provide a little glimpse that allows for reflection on these social constructs and thus will foster research in order to improve the understanding of the phenomenon and to promote change.

According to data obtained after the application of the ACE instrument for the assessment of different categories of maltreatment during childhood and adolescence, we found reports to a lesser extent than in national surveys.[1]

The average age of beginning of the consumption of any kind of drug was 15.5 years old. As for tobacco, alcohol, and marijuana, the average age of beginning of consumption in Uruguay was 16, 16.6 and 18.3 years.[6] These figures are in line with our findings.

According to the report Quinta Encuesta Nacional en Hogares sobre Consumo de Drogas6 (Fifth National Household Survey about the Use of Drugs) conducted in May 2012 by the National Drug Board with the general population aged between 15 and 65 years old, alcohol was reported as the most-used drug, with 74% of consumption over the previous 12 months. Tobacco was the second most-used drug with 33.9%. Of the illicit psychoactive drugs, the prevalence of use in the last 12 months was 8.3% for marijuana (5.5% in 2006), followed by cocaine with 1.9%.[6]

According to the data obtained in our study regarding the use of drugs in the last 12 months, and considering all factors that are necessary to compare two demographically different groups, it is possible to say that only the report on the consumption of cannabis in the last 12 months exceeded the report on the general population found in the household survey carried out by the National Drug Board in Uruguay. It is believed that this information on the use of cannabis may be conditioned on a cohort effect because the age distribution in the population studied is very narrow compared to the population surveyed by the nationwide study. Table 4 provides a comparative perspective of the results of drug use in Uruguay from data obtained in recent surveys and research carried out between 2010 and 2012. As we can see in this table, consumption in the last 12 months is close to the data on cocaine from previous studies. It can be seen that the consumption of alcohol and tobacco is lower in our study, and percentages of consumption of marijuana are higher. Cohort limitations, as mentioned before, must be taken into account for data analysis.

With regard to the use of tobacco, in a recent article on research carried out with first-year medical students from the same school where our study was conducted,[7] 28.1% of individuals surveyed reported being current smokers (affirmative answer regarding the use of tobacco in the last month). It is possible to say that the use of tobacco among our participants was high.

Table 4 - CDrug use (alcohol, tobacco, cannabis, cocaine) in the last 12 months. Comparison of prevalence studies in Uruguay, 2010 a 2012

Consumption in the last 12 months	Second National Survey on the Use of Drugs by Secondary School Students, 2006[5]	Fifth National Household Survey on the Use of Drugs, 201[2]	Llambí et al., 2012[7]	Data from the present study, Uruguay, 2011[10]
Population	General between 13 and 17 years old	General between 15 and 65 years old	Medical students	Medical students
Alcohol	67.7%	74.0%	-	24.3%
Tobacco	35.1%	33.9%	28.1%	16.4%
Cannabis	9.4%	8.3%	-	19.3%
Cocaine	1.5%	1.9%	-	1.4%

Concerning a greater abuse of drugs found in male individuals, and although abuse is analyzed by gender for all psychoactive drugs without separation by substance, the trend is similar to that of national studies.

Table 5 - Pearson's Chi-square Test and risk assessment for abuse of psychoactive drugs in relation to peer abuse. Uruguay, 2011

Pearson's X^2	Asymptotic sig. (bilateral) X^2	Correction for continuity [d]	Asymptotic sig. (bilateral)/correction	gl	OR risk assessment	CI 95%
37.175	0.000	35.144	0.000	1	7.375	3.652 - 14.891

According to the analyses carried out, it was not possible to establish any statistically significant relationship between variables, except for the one between self-report of drug abuse and peer abuse. Students who stated that they had peers who abused psychoactive drugs were seven times more likely to abuse drugs than the other individuals surveyed (Table 5).

CONCLUSIONS

Los datos obtenidos en esta población de estudio mAccording to the data obtained from this population, the four most consumed substances were alcohol, tobacco, cannabis, and cocaine. Only the report of use of cannabis in the last 12 months exceeded the report from the general population, and the necessary precautions to be taken for the comparison have been mentioned. The prevalence of use of the other drugs by this population was below that found in recent studies carried out in Uruguay with the general population.

Students who stated that they had peers who abused psychoactive drugs were seven times more likely to abuse psychoactive drugs than the other individuals surveyed. No statistically significant associations were found between maltreatment during childhood and adolescence, including all categories, and the use or abuse of drugs. Use of drugs such as ecstasy, heroin, and LSD was considered marginal among this population. The abuse of psychoactive drugs prevailed in male users. One in three of the men surveyed abuse drugs. Report of situations of maltreatment or abuse during childhood and adolescence in this population is below those found in other studies carried out in the country. However, the results of this study cannot be generalized to all university students in Uruguay.

Limitations

The data collection instrument requires retrospective reporting of adverse situations in the past. This type of record may result in recall bias due to various factors such as altered retrospective memory and non-voluntary interpretation of past events. Because data collection was done by means of a survey instrument, there is also the possibility of under-reporting or over-reporting, as the reported experiences can trigger psychoaffective feelings and denial mechanisms.

Despite the family and individual social impact of the use of cocaine on Uruguayan society, the questionnaire did not include reports of its consumption for methodological reasons so as to facilitate a comparison and data analysis between countries. To control for this variable, an open question about other drugs used was included in all questions related to use or abuse. In the answers to these questions, the use of cocaine was not reported, which is coherent with the characteristics of the population studied, for whom the use of this drug is considered to be marginal (very low prevalence).

Due to the study design, the results provide a rough understanding of consumption patterns in this population, and therefore they cannot be generalized.

This exploratory investigation aimed to provide a preliminary test in order to foster more complex studies in order to better understand patterns of use and abuse of drugs in this population and its possible relationship with adverse situations during childhood and adolescence.

For some categories of abuse, the number of cases was very low, which is a limitation that could be overcome with a larger sample.

Finally, the sample type and the technique used to obtain it do not allow for generalization of results either to the whole university population or to the general population. The analysis of variables, and more particularly the association of variables with high prevalence within a

population, may lead to misinterpretation for this very reason (for instance, the use of alcohol among students and some types of abuse that are more frequent). All the same, because this study cannot determine causal relationships, this possible effect has not been taken into account in the analysis.

Recommendations

We recommend that bodies that are responsible for training human resources personnel in health issues include and/or revisit curriculum content related to addiction issues, mental health, and the approach to and prevention of violence against children and adolescents.

The university might include the issue of the use of psychoactive drugs within its fields or lines of research as an academic contribution to the public and political spheres. This contribution would allow for the creation of the knowledge needed for collective enhancement, thus facilitating the decision-making process of bodies responsible for implementing public policies related to the drug issue in Uruguay.

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