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THE ASSOCIATION BETWEEN THE USE OF ALCOHOL, MARIJUANA AND COCAINE AND THE SOCIODEMOGRAPHIC CHARACTERISTICS OF UNIVERSITY STUDENTS OF RIBEIRÃO PRETO, BRAZIL

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ABSTRACT

Objective: to determine the prevalence of use in life and in the last three months of alcohol, marijuana and cocaine among university students from the social and health Sciences areas of Ribeirão Preto, Brazil and to evaluate the association between use in life and in the last three months of alcohol, marijuana and cocaine and the variables gender, area of the course, with whom the student lives, importance of religion, age and year of study.

Method: a cross-sectional study, carried out with a convenience sample of 275 students from a public university in Ribeirão Preto-SP. For data collection, two instruments were used, containing sociodemographic, training and psychoactive substances. For the analysis, the following tests were used: Fisher's exact test, Chi-square test of Person and Mann-Whitney test.

Results: As for sociodemographic factors, there was a significant association between the gender of the participants among the use of marijuana and cocaine in life (p=0.024 and p=0.005, respectively) and the last three months (p=0.013 and p=0.009, respectively), among the importance of religion and the lifetime use of alcohol, marijuana and cocaine (p <0.001, p <0.001 and p = 0.024, respectively) and the use of only marijuana in the last three months (p <0.001) and among the use of marijuana in the last three months and the year of graduation (p=0.003). Regarding age, the results showed a significant difference only between the groups that reported not to use alcohol in life (p=0.037).

Conclusion: the investigated university students presented a prevalence of use in their lifetime and in the last three months of marijuana and cocaine greater among men, but not for alcohol. The importance of religion was negatively associated with the use of investigated drugs. The results can provide important subsidies for the structuring of preventive measures for abuse of psychoactive substances between university students and the need for new investigations that cover the subject.

DESCRIPTORS: Alcoholic beverages. Cannabis. Cocaine. Students. Socioeconomic factors. Universities. Drugs.

A ASSOCIAÇÃO ENTRE O USO DE ÁLCOOL, MACONHA E COCAÍNA E AS CARACTERÍSTICAS SOCIODEMOGRÁFICAS DE UNIVERSITÁRIOS DE RIBEIRÃO PRETO, BRASIL

RESUMO

Objetivo: determinar a prevalência do uso na vida e nos últimos três meses de álcool, maconha e cocaína entre universitários das áreas de ciências sociais e da saúde de Ribeirão Preto, Brasil, e avaliar a associação entre uso na vida e nos últimos três meses de álcool, maconha e cocaína e as variáveis sexo, área de conhecimento do curso, com quem mora, importância da religião, idade e ano de estudo.

Método: estudo transversal, realizado com uma amostra por conveniência de 275 alunos de uma universidade pública de Ribeirão Preto-SP. Para coleta de dados foram utilizados dois instrumentos contendo questões sociodemográficas, de formação e sobre o uso de substâncias psicoativas. Para análise foram utilizados os testes: Exato de Fisher, Qui-quadrado de Person e Mann-Whitney.

Resultados: quanto aos fatores sociodemográficos, houve associação significante entre o sexo dos participantes, entre o uso de maconha e cocaína na vida (p=0,024 e p=0,005, respectivamente) e nos últimos três meses (p=0,013 e p=0,009, respectivamente), entre a importância da religião e o uso na vida de álcool, maconha e cocaína (p<0,001, p<0,001 e p=0,024, respectivamente) e o uso nos últimos três meses apenas para maconha (p<0,001) e entre o uso de maconha nos últimos três meses e o ano de graduação (p=0,003). Em relação à idade, os resultados apontam diferença significante apenas entre os grupos que referiram ou não uso na vida de álcool (p=0,037).

Conclusão: os universitários investigados apresentaram uma prevalência de uso na vida e nos últimos três meses de maconha e cocaína maior entre os homens, mais não para o álcool. A importância da religião foi negativamente associada ao uso das drogas investigadas. Os resultados podem fornecer subsídios importantes para a estruturação de medidas preventivas para uso indevido de substâncias psicoativas entre universitários e a necessidade de novas investigações que abarquem a temática.

DESCRITORES: Bebidas alcoólicas. Cannabis. Cocaína. Estudantes. Fatores socioeconômicos. Universidades. Drogas.

ASOCIACIÓN ENTRE EL USO DE ALCOHOL, MARIHUANA Y COCAÍNA, Y LAS CARACTERÍSTICAS SOCIODEMOGRÁFICAS DE UNIVERSITARIOS DE RIBEIRÃO PRETO, BRASIL

RESUMEN

Objetivo: determinar la prevalencia del uso de alcohol, marihuana y cocaína en la vida y en los últimos tres meses, entre universitarios del área de ciencias sociales y de la salud de Ribeirão Preto, Brasil, y evaluar la asociación entre el alcohol, la marihuana y la cocaína entre el uso en la vida y en los últimos tres meses, y las siguientes variables: sexo, área de conocimiento de la carrera, con quién vive, importancia de la religión, edad y año de la carrera.

Método: estudio transversal, realizado con una muestra por conveniencia de 275 alumnos de una universidad pública de Ribeirão Preto-SP. Para la recolección de datos, se utilizaron dos instrumentos que contienen preguntas sociodemográficas, de formación y sobre el uso de sustancias psicoactivas. Para el análisis, se utilizaron los tests: Exacto de Fisher, Qui-cuadrado de Person y Mann-Whitney.

Resultados: en relación a los factores sociodemográficos hubo asociación significativa entre el sexo de los participantes y el uso de marihuana y cocaína en la vida (p=0,024 y p=0,005, respectivamente) y en los últimos tres meses (p=0,013 e p=0,009, respectivamente); entre la importancia de la religión y el uso de alcohol, marihuana y cocaína en la vida (p<0,001, p<0,001 e p=0,024, respectivamente); el uso en los últimos tres meses solo para marihuana (p<0,001); y el uso de marihuana en los últimos tres meses y el año de graduación (p=0,003). En relación a la edad, los resultados señalan diferencia significativa solo entre los grupos que afirmaron o no haber consumido alcohol en la vida (p=0,037).

Conclusión: entre los universitarios investigados, los hombres presentaron una prevalencia mayor respecto al uso de la marihuana y cocaína en la vida y en los últimos tres meses, pero no en relación al alcohol. La importancia de la religión se asoció de forma negativa al uso de las drogas investigadas. Los resultados pueden generar importantes subsidios para estructurar medidas preventivas para el uso indebido de sustancias psicoactivas entre universitarios y la necesidad de nuevas investigaciones que abarquen la temática.

DESCRITORES: Bebidas alcohólicas. Cannabis. Cocaína. Estudiantes. Factores socioeconómicos. Universidades. Drogas.

INTRODUCTION

Drug use today has been associated with a number of mutually interacting factors, including genetic factors, personality traits, and environmental influences.[1–3]

Around the world, 246 million people, or one in 20 people aged 15-64, are estimated to have used illicit drugs in 2013.[4] In addition, approximately two billion people use alcohol, more than one billion makes use of tobacco.[5]

The experimentation of these substances usually occurs very early and the early use is considered to be a determinant of the continuity of use in the future.[6–7] In addition, its chronic use can trigger different negative consequences in the social and health sphere.[2,8] In young adults, psychoactive substance abuse can interfere with cognitive and emotional development, increase the chances of accidental injury, death, and increase the chances of developing substance use disorders.[5,9–10]

The university context is a promising environment for testing and drug consumption,[2,6–7] mainly because it detains a large number of young people; Therefore, this environment deserves special attention in terms of prevention.[1,11–12]

It is emphasized that abusive drug use, especially alcohol, is a leading cause of death among university students, as well as other consequences such as academic problems, unwanted pregnancies, sexually transmitted diseases, and legal consequences that may jeopardize prospects for work in the future.[9,12–13] It is understood, therefore, that the analysis of drug use among college students is essential to inform specific preventive measures for this *setting*.[11–14]

Thus, it was established as objectives of the present study to determine the prevalence of use in life and in the last three months of alcohol, marijuana and cocaine among university students in the areas of social and health sciences and to evaluate the association between use in life and in the last three months of alcohol, marijuana and cocaine, and the variables gender, area of the course, who they live with, importance of religion, age and year of study.

This study is part of a multicenter project that sought to study drug use among undergraduate students in social and health sciences courses at universities in Latin American and Caribbean countries.

METHOD

It is a cross-sectional, quantitative, multicenter study done in 2012, funded by the Government of Canada in partnership with the *Inter–American Drug Abuse Control Commission/Organization of American States* (CICAD/OAS) and organized by CICAD/OAS in partnership with the *Centre for Addiction and Mental Health* (CAMH), which involved the participation of nine universities from six Latin American countries and three Caribbean countries. The target population consisted of university students of the courses in the areas of social and health sciences in Ribeirão Preto, São Paulo, Brazil.

The students of the courses of Information Sciences and Documentation, Law, Nursing and Occupational Therapy of the campus of a public university of Ribeirão Preto-SP, older than 18 years, who were regularly enrolled and perpetuating the referred courses during the year 2014. The convenience sample consisted of 275 students who met the inclusion criteria of the study.

The data collection was performed through the application of a questionnaire. The variables included in the study were gender, age, area of study, with whom they live, level of importance attributed to religion and current study year. In addition, two questions related to lifetime use of alcohol, cocaine and marijuana have been included and their consumption in the last three months. This period was included for the purpose of assessing the recent use of these substances. These questions were constructed from the Brazilian Portuguese version of the Questionnaire for Alcohol, Smoking and Substance involving screaming test (ASSIST),[15] structured with eight questions about the use of nine classes of psychoactive substances (tobacco, alcohol, marijuana, cocaine, stimulants,

sedatives, inhalants, hallucinogens and opiates). The questions address the frequency of use in life and in the last three months, problems related to use, concern about the use by people close to the user, loss of performance of expected tasks, unsuccessful attempts to cease or reduce use, feeling of compulsion and use by injection.[15]

To support data collection, we selected four nurses with a minimum level of masters, who were duly trained to apply the questionnaire. The collection was conducted from June to August 2014. Initially, the researcher obtained the list of potential classes to participate in the study. The heads of each class were contacted to obtain their approval to administer the study during a class period. In the agreed period, in each participating class, the nurses entered the classroom presented by the person in charge, who then suspended the class and left the room. The researcher explained about the study to those present and was granted the necessary time so that the student invited to participate in the research could reflect, consulting, if necessary, his relatives or other people who could help him in making free and informed decision. Thus, the nurses returned to the classroom at another time for the beginning of the data collection. Thus, on the agreed date, the students who accepted to participate in the study received a Free Informed Consent Form (TCLE) and the instrument of data collection. The average time for completing the questionnaire was 15 minutes.

For the statistical analysis, the significance level was set at 0.05 and it was used the *software* SPSS version 17.0. The data were presented through descriptive analysis and Pearson's Chi-square test was applied to verify the associations between the variables use in life and in the last three months of alcohol and marijuana and the gender of university students, use in life and in the last three months of marijuana and the importance of religion and use in life and the last three months of alcohol and marijuana and the year of graduation; and Fisher's Exact test for life-time and last 3 months cocaine use variables and gender, use in life and the last three months of alcohol and cocaine and the importance of religion and use in life and in the last three months of cocaine and the year of graduation.

The Mann-Whitney test was used to compare the age of university students among the groups that reported yes and no for use in life and in the last three months of alcohol, marijuana and cocaine, since the variable had no normal distribution, verified by the Shapiro-Wilk test.

RESULTS

As can be seen in Table 1, the majority of university students were female (68%), between 17 and 54 years old and had a mean age of 21 years (SD=4.8), attended a course related to social sciences (56%), lived with friends (53%), attributed high importance to religion (71%) and was enrolled in the second year or more (67%).

Table 1 – Distribution of university students according to sociodemographic variables (n=275). Ribeirão Preto-SP, 2014

Sociodemographic characteristics	n (%)	Interval	Median	Mean (SD)
Gender				
Female	187 (68)			
Male	88 (32)			
Age (years)		17-54	20.0	21.0 (4.8)
Area				
Health Sciences	120 (44)			
Social Sciences	155 (56)			

Sociodemographic characteristics	n (%)	Interval	Median	Mean (SD)
with whom they live				
Relatives	85 (31)			
Friends	147 (53)			
Alone	43 (16)			
Importance of religion				
High	195 (71)			
Low	80 (29)			
Current study year				
First	91 (33)			
Second or more	184 (67)			

Table 2 shows the prevalence of alcohol, marijuana and cocaine use in life and in the last three months according to the gender of university students. Among the university students 87.6% used alcohol in their lives and most of them used alcohol in the last three months (83.3%), 24.4% have tried marijuana and 2.5% cocaine. Significant differences were found only between the gender of university students and marijuana and cocaine use in life (p=0.024 and p=0.005, respectively) and in the last three months (p=0.013 and p= 0.009, respectively).

Table 2 – Use in life and in the last three months of alcohol, marijuana and cocaine according to the gender of university students. Ribeirão Preto-SP, 2014

Drugs	Male (n=88)		Female (n=187)		Total (n=275)		p
	Yes n (%)	No n (%)	Yes n (%)	No n (%)	Yes n (%)	No n (%)	
Use in life							
Alcohol	78 (88.6)	10 (11.4)	163 (87.2)	24 (12.8)	241 (87.6)	34 (12.4)	0.629*
Marijuana	29 (33.0)	59 (67.0)	38 (20.3)	149 (79.7)	67 (24.4)	208 (75.6)	0.024*
Cocaine	6 (6.8)	82 (93.2)	1 (0.5)	186 (99.5)	7 (2.5)	268 (97.5)	0.005†
No substance	9 (10.2)	79 (89.8)	23 (12.3)	164 (87.7)	32 (11.6)	243 (88.4)	0.317*
Use in the last three months							
Alcohol	77 (87.5)	11 (12.5)	152 (81.3)	35 (18.7)	229 (83.3)	46 (16.7)	0.437*
Marijuana	23 (26.1)	65 (73.9)	27 (14.4)	160 (85.6)	50 (18.2)	225 (81.8)	0.013*
Cocaine	4 (4.5)	84 (95.5)	0 (0.0)	187 (100.0)	4 (1.5)	271 (98.5)	0.009†
No substance	11 (12.5)	77 (87.5)	34 (18.2)	153 (81.8)	45 (16.4)	230 (83.6)	0.228*

*Chi-square test; †Fisher's exact test

According to the results, there was no significant association between the variables use of alcohol, marijuana and cocaine in life and in the last three months and the area of knowledge of the university course (social sciences or health sciences) or among such use and live with family, friends or alone.

However, there was a significant association between the importance of religion (Table 3) and lifetime use of alcohol, marijuana and cocaine (p<0.001, p<0.001 and p=0.024, respectively) and use of only marijuana in the last three months (p<0.001).

Table 3 – Use in life and in the last three months of alcohol, marijuana and cocaine and the importance of religion for university students. Ribeirão Preto-SP, 2014

Drugs	Very important (n=195)		Little important (n=80)		Total (n=275)		p
	Yes n (%)	No n (%)	Yes n (%)	No n (%)	Yes n (%)	No n (%)	
Use in life							
Alcohol	161 (82.6)	34 (17.4)	80 (100.0)	0 (0.0)	241 (87.6)	34 (12.4)	<0.001†
Marijuana	31 (15.9)	164 (84.1)	36 (45.0)	44 (55.0)	67 (24.4)	208 (75.6)	<0.001*
Cocaine	2 (1.0)	193 (99.0)	5 (6.3)	75 (93.7)	7 (2.5)	268 (97.5)	0.024†
No substance	163 (83.6)	32 (16.4)	80 (100.0)	0 (0.0)	243 (88.4)	32 (11.6)	<0.001†
Use in the last three months							
Alcohol	152 (77.9)	43 (22.1)	77 (96.3)	3 (3.7)	229 (83.3)	46 (16.7)	0.064†
Marijuana	17 (8.7)	178 (91.3)	33 (41.3)	47 (58.7)	50 (18.2)	225 (81.8)	<0.001*
Cocaine	1 (0.5)	194 (99.5)	3 (3.8)	77 (96.2)	4 (1.5)	271 (98.5)	0.098†
No substance	43 (22.1)	152 (77.9)	2 (2.5)	78 (97.5)	45 (16.4)	230 (83.6)	<0.001†

*Chi-square test; †Fisher's exact test

In relation to the year of the course, there was a significant association only among the use of marijuana in the last three months and the graduation year (p=0.003) (Table 4).

Table 4 – Use in life and in the last three months of marijuana the year of graduation of the university students. Ribeirão Preto-SP, 2014

Drugs	1st year (n=91)		2nd year or above (n=184)		Total (n=275)		P
	Yes n (%)	No n (%)	Yes n (%)	No n (%)	Yes n (%)	No n (%)	
Use in life							
Alcohol	78 (85.7)	13 (14.3)	163 (88.6)	21 (11.4)	241 (87.6)	34 (12.4)	0.352*
Marijuana	19 (20.9)	72 (79.1)	48 (26.1)	136 (73.9)	67 (24.4)	208 (75.6)	0.333*
Cocaine	1 (1.1)	90 (98.9)	6 (3.3)	178 (96.7)	7 (2.5)	268 (97.5)	0.431†
No substance	13 (14.3)	78 (85.7)	19 (10.3)	165 (89.7)	32 (11.6)	243 (88.4)	0.335*
Use in the last three months							
Alcohol	77 (84.6)	14 (15.4)	152 (82.6)	32 (17.4)	229 (83.3)	46 (16.7)	0.743*
Marijuana	8 (8.8)	83 (91.2)	42 (22.8)	142 (77.2)	50 (18.2)	225 (81.8)	0.003*
Cocaine	0 (0.0)	91 (100.0)	4 (2.2)	180 (97.8)	4 (1.5)	271 (98.5)	0.304†
No substance	13 (14.3)	78 (85.7)	19 (10.3)	165 (89.7)	32 (11.6)	243 (88.4)	0.335*

*Chi-square Test †Fisher's Exact Test

Regarding age (years), the results presented in Table 5 indicate that there was a significant difference only among the groups that reported not to use alcohol in life (p=0.037).

Table 5 – Age values (years) of university students who reported use in life and in the last three months of alcohol, marijuana, and cocaine. Ribeirão Preto-SP, 2014

Drugs	Yes			No			p*
	Interval	Median	Mean (SD)	Interval	Median	Mean (SD)	
Use in life							
Alcohol (n=273)	17-54	20.0	21.1 (4.9)	17-42	19.0	20.3 (4.5)	0.037
Marijuana (n=274)	17-54	20.0	20.8 (4.8)	18-54	20.0	21.5 (5.1)	0.068
Cocaine (n=274)	17-54	20.0	21.7 (2.1)	17-54	20.0	21.0 (4.9)	0.068
Use in the last three months							
Alcohol	17-54	20.0	21.1 (5.0)	18-42	20.0	21.3 (5.4)	0.854
Marijuana	18-54	20.0	21.5 (5.3)	17-52	20.0	21.0 (4.4)	0.263
Cocaine	19-25	20.5	21.2 (2.6)	17-54	20.0	21.0 (4.6)	0.495

*Teste Mann-Whitney

DISCUSSION

Among the substances investigated, alcohol was the drug most consumed by university students, followed by marijuana, corroborating previous studies that point out these drugs as preferred by the university population.[1–2,5–7,11–12,16] In relation to cocaine use in life and in the last three months the identified rate was relatively low. It is important to emphasize that, for this study, the type of alcohol consumption (problematic or social) made by university students was not considered. A study conducted among university students in Brazil pointed out the prevalence of 86.2% for alcohol use throughout life and 26.1% for marijuana use.[5] Among Chilean university students, the prevalence of alcohol consumption was 96%, marijuana 22% and cocaine 1.4%.[17] In relation to Spain, a study showed higher prevalences of marijuana use among university students, around 90.5,[14] while in Kuwait this prevalence was lower, 14.4%.[7]

It should be noted that becoming a university student can increase opportunities for exposure to drugs, especially illicit drugs such as marijuana and cocaine.[4,6,10] However, the low rates of cocaine use found may be associated with the difficulty of assuming consumption or in relation to access to that substance.

Regarding the gender of the participants, although the majority of the sample consisted of female students, the prevalence of marijuana and cocaine use in life and in the last three months was higher among male university students (significant association), corroborating results from other searches.[14,17–21] On the other hand, the prevalence of use in life and in the last three months of alcohol consumption was similar between female and male university students.

Men experience drugs at an earlier age and cocaine is consumed preferentially by them. Few studies have reported prevalence of similar alcohol use among men and women.[13] In this way, it is important to highlight the changes that have occurred related to the role of women in today's society. The accumulation of functions, that is, being a mother, wife, professional, citizen, woman, among other roles may be significantly related to increased vulnerability to stress among women. In addition, despite women's achievements, physical and verbal violence still permeates the context of

women.[22–23] The repercussions of these changes may be responsible for the appearance of some mental disorders such as anxiety and depression, and the use of drugs.[20–21]

Most of the participating university students reported living with friends and, although this situation was considered a risk factor for drug use when compared to living with their parents,[13,16,18,24] there was no significant difference between these groups. A study conducted with nursing students in Honduras identified the family as both protective and risk factors for drug use.[3,11,25]

The fact that the students who live with their parents do not differ from those who live with their friends in terms of substance use, suggests that other factors are certainly involved in this event, that is, additional studies that integrate variables related to substance use by parents (which may influence the students' consumption), as well as the perception of social support of these students, since the isolated fact of cohabiting with parents or friends does not necessarily imply being supported, sharing affections and/or implementing partnerships. Such affective components could better elucidate whether or not, in fact, with whom these students live, there is or not association with the use of substances.[25]

Regarding religion, the percentage of university students who reported using alcohol, marijuana and cocaine in their lives or use of marijuana in the last three months is higher among those who do not find the religion important (significant association). This result corroborates other studies that point to religion as an important protection factor related to drug use.[2–3,11–12,26]

The present study pointed out that the use of marijuana in the last three months was more prevalent among students of the second year or more, to the detriment of those who were still in the first year, for the other substances there was no significant association. This result is certainly related to the age factor, but may also reflect other issues such as academic difficulties that have been described as an important risk factor for marijuana use by students.[12,16] In addition, longer stay in the university extends the time of exposure to drugs.

Regarding age (years), the results presented indicate that there was a significant difference only between the groups that reported not to use alcohol in life. A study done in Kuwait,[7] which showed that, for each additional year in the university age, the relative risk of illicit drug use is increased by 10%; and another study with high school students in Spain described that as students increased in age, drug consumption and other risk situations increased, such as an increase in overweight and obesity.[27] A study in a sample of Iranian university students also pointed out that the older the students, the greater the tendency to consume more licit and illicit substances.[10]

Regarding the increase in the age and/or the year of the undergraduate course is associated with higher consumption, it also brings to the discussion the question of the sociability of the participants, that is, the results may reflect that, as students progress in the course, tend to expand their networks of relationships and certainly opportunities for exchanges and leisure with their peers can encourage the use of these substances. On the other hand, stress triggered by increasing demands along course progression may also be important factors to be considered in later studies as potential predictors of drug use in this population.

The main limitations of this study are that alcohol, marijuana and cocaine consumption were evaluated only in the individuals' lives and in the last three months, that is, it was not considered the type of consumption made by university students, which could offer a more complete and comprehensive result of drug use and abuse.

CONCLUSION

The results of the present study allow us to conclude that there was a high prevalence of use in life and in the last three months of alcohol and marijuana among university students investigated in counterpart to the use of cocaine that was relatively low. The university students investigated showed a prevalence of use in life and in the last three months of marijuana and cocaine higher

among men, but not for alcohol. The importance of religion was negatively associated with the use of investigated drugs.

The results reflect the importance of structuring preventive measures for abuse of psychoactive substances among university students and the need for new investigations that address the subject. Thus, educational institutions should focus on more efficient and viable strategies for the prevention of the consumption of psychoactive substances through the creation of spaces for the reception of university students, exchange of experiences and professional support. In addition to a greater insertion of the theme in the academic formation so that this phenomenon is widely understood.

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