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## DRUG USE AND KNOWLEDGE OF ITS CONSEQUENCES AMONG NURSING STUDENTS

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### ABSTRACT

**Objective:** to analyze the use of psychoactive substances and the knowledge of the consequences of alcohol, marijuana and cocaine use among first-year and final-year undergraduate nursing students.

**Method:** descriptive cross-sectional study, with 141 nursing undergraduates from a public university in the state of São Paulo. Data was collected using the Questionnaire for Screening the Use of Alcohol, Tobacco and Other Substances and a questionnaire on the knowledge of the consequences of alcohol, marijuana and cocaine use. Fisher's exact test, Pearson's chi-square and Student's *t*-test were applied for analysis.

**Results:** alcohol and marijuana were the substances most commonly used by students. Concerning students' knowledge of the consequences of alcohol, marijuana and cocaine use, the majority answered more than 50% of the questionnaire correctly, which is considered a good level of knowledge. Furthermore, 86.5% answered more than half of the questions correctly in relation to alcohol, 68.8% to marijuana and 76.6% to cocaine. Regarding the mean scores on the knowledge of the consequences of substance use between first-year and final-year students, there was a statistically significant difference for alcohol ( $p=0.026$ ) and cocaine ( $p<0.001$ ), with final-year students obtaining higher scores.

**Conclusion:** the hypothesis that knowledge of the consequences of drug use affects drug use was confirmed only for marijuana. The results highlight the need to consider reviewing content being taught to undergraduate nursing students on psychoactive substance use.

**DESCRIPTORS:** Drug abuse. Alcohol. Knowledge. Students. Nursing.

## CONSUMO DE DROGAS E CONHECIMENTO SOBRE SUAS CONSEQUÊNCIAS ENTRE ESTUDANTES DE GRADUAÇÃO EM ENFERMAGEM

### RESUMO

**Objetivo:** analisar o padrão de consumo de substâncias psicoativas e o conhecimento das consequências do uso de álcool, maconha e cocaína de estudantes de graduação em enfermagem no primeiro e no último ano do curso.

**Método:** estudo descritivo transversal, com 141 graduandos de enfermagem de uma universidade pública do interior do Estado de São Paulo. Para coleta dos dados foram utilizados o Questionário para Triagem do Uso de Álcool, Tabaco e outras Substâncias e um questionário sobre o conhecimento das consequências do uso de álcool, maconha e cocaína. Para análise, foram aplicados o teste Exato de Fisher, o Qui-quadrado de Pearson e o Teste *t* de Student.

**Resultados:** o álcool e a maconha foram as substâncias mais consumidas pelos estudantes. Quanto às consequências do uso de álcool, maconha e cocaína, a maioria alcançou mais de 50% de acertos, considerado um bom conhecimento, sendo que 86,5% obtiveram mais da metade de acertos em relação ao álcool, 68,8% para a maconha e 76,6% para a cocaína. Quanto à média dos escores sobre o conhecimento de tais consequências entre os alunos ingressantes e aqueles do último ano, encontrou-se diferença estatisticamente significativa para o álcool ( $p=0,026$ ) e a cocaína ( $p<0,001$ ), sendo que os alunos do último ano atingiram maiores escores.

**Conclusão:** a hipótese de que o conhecimento das consequências do consumo de drogas interfere no uso foi confirmada apenas para a maconha. Os resultados possibilitam repensar a importância da revisão de conteúdos sobre a temática aos alunos de graduação em enfermagem.

**DESCRIPTORIOS:** Uso indevido de drogas. Álcool. Conhecimento. Estudantes. Enfermagem.

# CONSUMO DE DROGAS Y CONOCIMIENTO SOBRE SUS CONSECUENCIAS ENTRE LOS ESTUDIANTES DE GRADUACIÓN EN ENFERMERÍA

## RESUMEN

**Objetivo:** analizar el estándar de consumo de sustancias psicoactivas y el conocimiento de las consecuencias del uso de alcohol, marihuana y cocaína de los estudiantes de la graduación en enfermería en el primer año y en el último año del curso.

**Método:** estudio descriptivo - transversal con 141 graduandos de enfermería de una universidad pública del interior del Estado de São Paulo. Para la recolección de los datos se utilizaron el Cuestionario para Selección del Uso de Alcohol, Tabaco y otras Sustancias y un cuestionario sobre el conocimiento de las consecuencias del uso de alcohol, marihuana y cocaína. Para el análisis se aplicaron el test Exacto de Fisher, el Chi-cuadrado de Pearson y el Test t de Student.

**Resultados:** el alcohol y la marihuana fueron las sustancias más consumidas por los estudiantes. Sobre las consecuencias en el uso de alcohol, marihuana y cocaína, la mayoría alcanzó más del 50% de aciertos, considerado como un buen conocimiento, siendo que el 86,5% obtuvo más de la mitad de aciertos en relación al alcohol, el 68,8% para la marihuana y el 76,6% para la cocaína. En relación al promedio de los resultados sobre el conocimiento de tales consecuencias entre los alumnos ingresantes y los del último año, se encontró una diferencia estadísticamente significativa para el alcohol ( $p=0,026$ ) y la cocaína ( $p<0,001$ ), siendo que los alumnos del último año alcanzaron resultados mayores.

**Conclusión:** la hipótesis de que el conocimiento de las consecuencias del consumo de drogas interfiere en el uso fue apenas confirmada para la marihuana. Los resultados posibilitan repensar la importancia de la revisión de contenidos sobre la temática para los alumnos de la graduación en enfermería.

**DESCRIPTORES:** Uso indevido de drogas. Alcohol. Conocimiento. Estudiantes. Enfermería

## INTRODUCTION

The use of legal and illegal drugs has occurred throughout history affecting personal, social, religious and political aspects of life and has been a major challenge in both developed and developing countries because of harmful use and the numerous associated social and health problems among different population groups.<sup>1-2</sup>

This challenge has also been observed in universities because of the permissive behavior of students in relation to the use of legal and illegal drugs.<sup>3-5</sup> Over the course of their degrees, students are faced with a variety of personal and academic demands, making them vulnerable to adopting harmful behavior during this period of life. Within nursing degrees, students have presented difficulties in reconciling personal, emotional and social demands with theoretical and practical academic activities, culminating in high levels of stress and, consequently, placing students at greater risk to health problems.<sup>6-7</sup>

As a result, different responses can be triggered to handle difficult situations, for example, starting and/or maintaining abusive habits of legal and illegal drug use. On the other hand, future nurses are expected to work towards improving the health of the population, including care related to alcohol and drug abuse.<sup>1</sup> Consequently, training over the course of the degree is important for students to acquire experience in this matter. However, access to information is still limited and may affect knowledge about the consequences of both legal and illegal drug use.<sup>8-9</sup>

A cognitive-behavioral perspective believes that the acquisition of knowledge about the negative consequences of certain lifestyles can help in the adoption of healthy behavior. Studies evaluating the knowledge of nursing students on drug use have reinforced the importance of deepening understanding of this issue to motivate greater reflection over the course of the degree.<sup>8,10-11</sup>

In view of the above, the present study is based on the hypothesis that the acquisition of knowledge by nursing students about the consequences of substance use can reduce the consumption of alcohol and drugs within this population.

It is believed that through their courses and theoretical-practical activities involving users of health services for alcohol and other drugs, students can grow in their knowledge about the consequence of substance use and, therefore, modify their personal behavior. Thus, this study aimed to analyze the use of psychoactive substances and the knowledge of the consequences of alcohol, marijuana and cocaine use of first-year and final-year undergraduate nursing students. It aims to aid awareness about alcohol and drug use in the university environment, especially in the context of undergraduate nursing, with a view to strengthening curricular content and providing information to promote self-responsibility in health care.<sup>3-4,12-14</sup>

## METHOD

A cross-sectional descriptive study was conducted with undergraduate nursing students of

bachelor's degree programs at a public university in the state of São Paulo. The study sample was composed of 141 students who met the following inclusion criteria: to be enrolled in the first year or final year of the degree and to be present in the classroom in the period designated for data collection. The exclusion criterion was: age less than 18 years.

Three instruments were used for data collection: a description of socio-demographic variables (age, sex, race, religion, marital status, income, occupation, residence and course semester), prepared on the basis of minimum social indicators described by the Brazilian Institute of Geography and Statistics (IBGE); the Alcohol, Smoking and Substance Involvement Screening Test (ASSIST); and a questionnaire on the knowledge of the consequences of the use of alcohol, marijuana and cocaine developed by the group of researchers of the Inter-American Drug Abuse Control Commission (CICAD) in partnership with Centre for Addiction and Mental Health (CAMH) of Toronto, Canada, 2012-2013.<sup>13-15</sup>

ASSIST was used to evaluate the pattern of alcohol and drug use. It is a questionnaire with eight questions on the use of various psychoactive substances, aimed to identify which participants use these substances, how often and other related issues.<sup>16-17</sup>

The questionnaire on knowledge of the consequences of alcohol, marijuana and cocaine use measures whether a student's knowledge about the negative biological psychological and social effects of substance abuse is good (50% correct or higher) or poor (less than 50% correct). This tool was developed using the list of consequences of drug use in the ASSIST manual citing the implications of alcohol, marijuana and cocaine use and in the Adverse Consequences of Substance Use Scale (ACSUS).<sup>16-17</sup>

ACSUS is an instrument composed of eight items, which evaluates clinical effects and identifies the biological, psychological and social areas of the individual affected by drug use. Thus, the questionnaire on the knowledge of the consequences of alcohol, marijuana and cocaine use covered three consequences of each category (three social, three psychological and three biological), with a total of nine consequences for each drug. In addition, it included five *distractors* for each drug (real or imagined consequences not associated with drugs) to prove standardized or random responses. Thus, there were 42 items, each of which the participants needed to indicate whether they were true or false, and knowledge was evaluated for each drug separately. The score for each drug was calculated by

allocating one point for each correct answer, with a total of 14 points for each consequence. A group of specialists, nine researchers and two professionals working in the area of alcohol and drugs, reviewed and validated the questionnaire, evaluating whether the questions were sufficient and appropriate for the research objectives. Then, a pilot study was conducted with 20 university students, who were invited to comment on issues concerning the instrument (clarity, understanding) and provide suggestions for changes that facilitated their understanding. Participants in the pilot study offered no suggestions for changes nor did they make any negative comments and believed that the instrument was relevant and appropriate.

Data was collected from February to March 2014. Initially, the principal researcher obtained the list of potential classes for participation in the study. The students who agreed to participate received, on a previously agreed date, a free and informed consent form to be signed and the data collection questionnaire, which was completed in 15 minutes, on average. This project was evaluated by the Research Ethics Committee of the University of São Paulo, at Ribeirão Preto College of Nursing, and approved under protocol 259/2013 on November 06, 2013, CAAE No. 18412113.1.0000.5393.

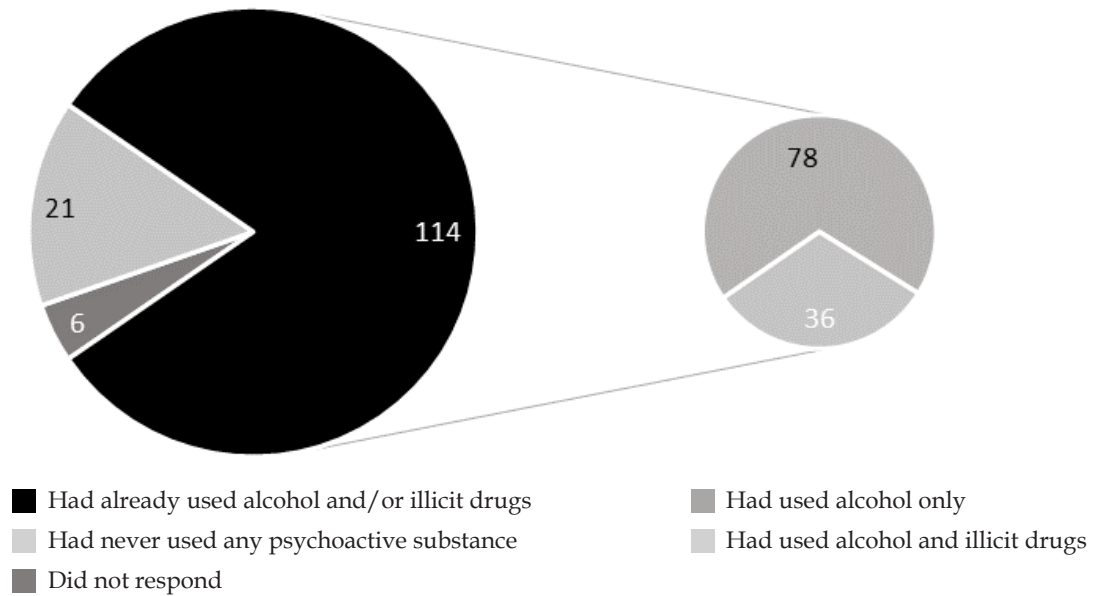
SPSS software was used for data analysis, with sociodemographic data being analyzed based on frequency distribution and descriptive statistics. The scores of the questionnaire on the knowledge of consequences of the use of alcohol, marijuana and cocaine were submitted to the Kolmogorov-Smirnov test and met the normal distribution parameters, then, to calculate the difference between the means, the Student's t-test was conducted. To determine association, Fisher's exact test and Pearson's chi-square test were used.

## RESULTS

Of the 141 undergraduate nursing students, 86 (61%) were in their first year of their degree and 55 (39%) were in their final year. The minimum age was 18 years, and the maximum age was 36 years ( $m=21.8$ ;  $dp\pm 3.42$ ). Most of the university students were female (88.7%), white (75.9%), Catholic (58.2%), unmarried (95.7%) with a per capita income of two to five minimum salaries (35.3%) and were not engaged in remunerated work (68.1%). In relation to housing, 54 (38.3%) lived with their families, 57 (40.4%) lived with other students and 30 (21.3%) lived alone or in another situation.

Regarding the use of psychoactive substances, 114 (84.4%) participants reported that they had used alcohol and/or illicit drugs at some point in their lives, 78 (57.2%) had used alcohol only, 36 (26.7%)

had used alcohol and some illicit substance and 21 (15.6%) had never taken any psychoactive substance in their lives. Six students did not answer this question (4.2%) (Figure 1).

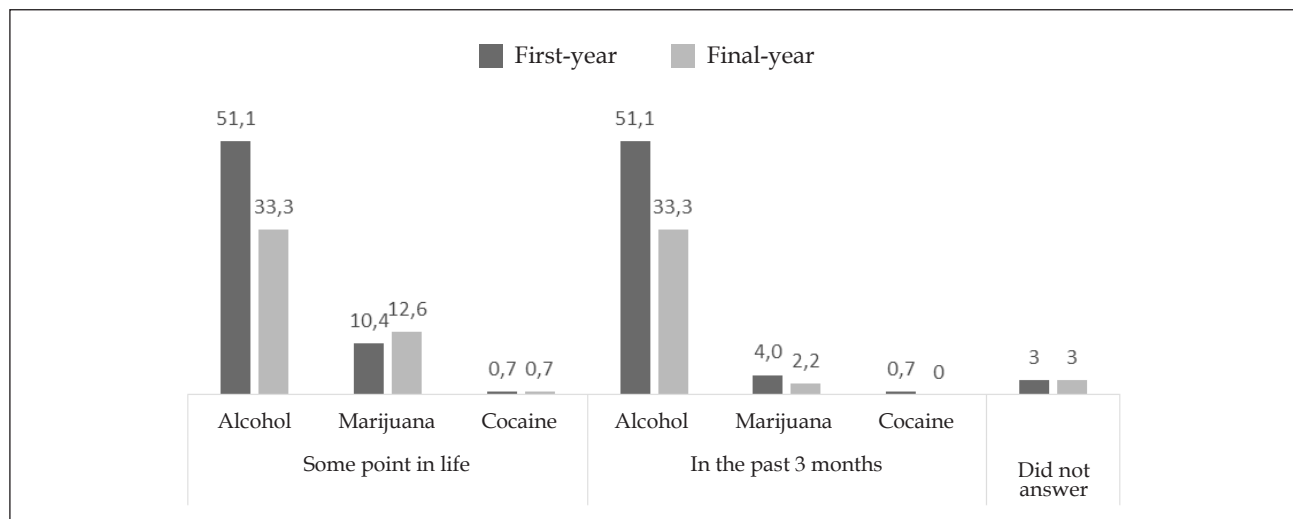


**Figure 1 - Distribution of participants according to substance use previously, Ribeirão Preto, SP, Brazil, 2014. (n=141)**

In terms of personal use, students mentioned alcohol and marijuana most frequently. Of the students, 13.5% reported habits that require intervention for alcohol, 5.7% for marijuana and 1.4% for cocaine.

that they had used at some point in their lives and in the past three months. There was no association between the first-year and final-year nursing students and the use of alcohol, marijuana and cocaine at some point previously and in the last three months.

Figure 2 shows the type of substance that first-year and final-year nursing students reported



**Figure 2 - Percentage of first-year and final-year nursing students according to the use of alcohol, marijuana and cocaine at some point previously in their lives and in the last three months. Ribeirão Preto, SP, Brazil, 2014. (n=141)**

Regarding knowledge of the consequences of alcohol, marijuana and cocaine use, most participants correctly answered more than 50% of the questions, which is considered a good level of knowledge. Furthermore, 86.5% of the participants correctly answered more than half of the questions concerning alcohol, 68.8% for marijuana and 76.6% for cocaine.

In the test comparing the mean scores between first-year and final-year students and their knowledge of the consequences of alcohol, marijuana and cocaine use, there was a significant difference for alcohol ( $p=0.026$ ) and cocaine ( $p<0.001$ ). The final-year students obtained higher scores (Table 1).

**Table 1 - Distribution of mean scores between first-year and final-year nursing students according to their knowledge about the consequences of alcohol, marijuana and cocaine use. Ribeirão Preto, SP, Brazil, 2014. (n=141)**

Drug	Year of study	n	Mean (SD)	p-value
Alcohol	First	86	13.5 (1.3)	<b>0.026</b>
	Final	55	14.0 (1.4)	
Marijuana	First	86	13.1 (1.5)	0.152
	Final	55	13.4 (1.4)	
Cocaine	First	86	12.9 (1.0)	<b>&lt;0.001</b>
	Final	55	13.6 (0.9)	

As first-year students are generally younger than final-year students, the comparison test of means between age and knowledge about alcohol, marijuana and cocaine was used (Table 2). To classify this knowledge of the consequence of the use of these substances, the obtained scores were subdivided into

below average or above average. The stipulated cut-off point was seven points for each drug. The results show a significant association between the knowledge of the consequences of alcohol use ( $p=0.015$ ) and age, suggesting that age may interfere in the association between the year of graduation and knowledge.

**Table 2 - Distribution of the average age of students according to knowledge about the consequences of alcohol, marijuana and cocaine use. Ribeirão Preto, SP, Brazil, 2014. (n=141)**

Knowledge of the consequences	Age	
	Mean (SD)	p-value
Alcohol		0.015
Below average	19.8 (3.4)	
Above average	21.3 (3.4)	
Marijuana		0.273
Below average	20.9 (3.8)	
Above average	21.2 (3.3)	
Cocaine		0.080
Below average	20.3 (3.1)	
Above average	21.3 (3.5)	



Table 3 shows the relationship between alcohol, marijuana and cocaine use previously and in the last three months, and knowledge about the consequences of using these substances. Of the participants, 66.7% had never used marijuana and 79.4% of those who had not used it in the last three months had above-average scores for knowledge of the consequences of alcohol use. The association

between these variables was significant ( $p=0.004$  and  $p=0.019$ , respectively). In addition, 53.9% of those who had never used marijuana and 63.8% of those who had not used it in the past three months also had above-average scores for knowledge of the consequences of the use of marijuana. The association between these variables was also significant ( $p=0.045$  and  $p=0.026$ , respectively) (Table 3).

**Table 3 - Distribution of students according to consumption, previously and in the last three months, of alcohol, marijuana and cocaine according to knowledge about the consequences of the use of these substances. Ribeirão Preto, SP, Brazil, 2014. (n=141)**

Drug use	Knowledge of the consequences									
	Alcohol			Marijuana			Cocaine			
	Below Average	Above Average	<i>p</i> -value	Below Average	Above Average	<i>p</i> -value	Below Average	Above Average	<i>p</i> -value	
Previously <sup>†</sup>										
Alcohol	Yes	16(11.3)	98(69.5)	0.738*	37(26.2)	77(54.6)	0.432†	26(19.3)	88(65.2)	0.920†
	No	2(1.4)	19(13.5)		5(3.5)	16(11.3)		5(3.7)	16(11.3)	
Marijuana	Yes	9(6.4)	22(15.6)	0.004†	14(9.9)	17(12.0)	0.045†	4(3.0)	27(20)	0.123*
	No	9(6.4)	94(66.7)		27(19.1)	76(53.9)		27(19.1)	76(53.9)	
Cocaine	Yes	0(0.0)	2(1.4)	1.000*	1(0.7)	0(0.0)	0.527*	0(0.0)	2(0.7)	1.000*
	No	18(12.8)	115(81.6)		92(65.2)	31(22.0)		31(22.0)	102(75.6)	
In the last three months <sup>‡</sup>										
Alcohol	Yes	16(11.3)	98(69.5)	0.738*	37(26.2)	77(54.6)	0.432†	26(18.4)	88(65.2)	0.920†
	No	2(1.4)	19(13.5)		5(3.5)	16(11.3)		5(3.5)	16(11.3)	
Marijuana	Yes	4(2.8)	5(3.5)	0.019*	6(4.2)	3(2.1)	0.026*	1(0.7)	8(5.7)	0.684*
	No	14(9.9)	112(79.4)		36(25.5)	90(63.8)		30(21.2)	96(68.1)	
Cocaine	Yes	0(0.0)	1(0.7)	1.000*	1(0.7)	0(0.0)	0.311*	0(0.0)	1(0.7)	1.000*
	No	18(12.8)	116(82.2)		41(29.1)	93(65.9)		31(22.0)	103(73.0)	

\*Fisher's exact; †Pearson's chi-square; ‡Six students did not answer the question about use previously and in the last three months

## DISCUSSION

The behavior of university students regarding alcohol and other drug use is of concern, since the frequency of substance use by this group is greater than when compared to the general population.<sup>18-19</sup> The results of this study corroborate data from the National Survey on the use of alcohol, tobacco and other drugs carried out with university students from the 27 Brazilian states, in which alcohol and marijuana were, respectively, the most preferred substances and only a small portion of the students reported never having made use of legal or illegal psychoactive substances.<sup>18</sup>

As university is a period of change and adaptation, students who have never used any substance are at risk for experimental use. For the students who have already been exposed to use, the potential risk exists for continued use, increased frequency and/or associated use of multiple drugs, which was also identified in the present study. In this regard, research on risk behavior presented by university students suggests the development of physiological, psychological and social harm, with the aggravation of already being frequently exposed to other risks such as car accidents, drunkenness, physical and sexual abuse under the influence of some substance, unprotected sex, as well as academic difficulties.<sup>5,19-20</sup>

The results show that students with above-average levels of knowledge were mostly those who reported not having used marijuana in the past three months. This corroborates findings from previous studies suggesting that the use of marijuana may impair the development of a student's cognitive performance and may compromise the acquisition of concepts necessary to complete their degree.<sup>13-14,21</sup> However, it is uncertain whether this in fact reflects cognitive impairments or merely reveals a lower interest of marijuana users to seek information on this issue due to their more permissive behavior regarding the use of these substances. This reflection stems from the fact that, for the level of knowledge about cocaine, consuming marijuana had no influence.

Therefore, the good level of knowledge presented even by the first-year students suggests that this knowledge was not necessarily acquired at the

university, but probably developed through life experiences or through prevention strategies in the media or at school.

Another aspect that these results suggest is that knowledge about the consequences of alcohol or cocaine use is not necessarily a protective factor for the use of these substances, given the high incidence of alcohol consumption in the sample studied. In this regard, the core of the discussion goes beyond the cognitive aspect and addresses the issue of access to information and the power it has to mediate behavioral change.

Final-year students were expected to have more specific, comprehensive and adequate knowledge of the consequences of alcohol and drug use, given the course stage and the completion of specific mental health study units and other basic disciplines such as pharmacology and biochemistry. In this aspect, the difference was significant for the understanding of the consequences of the use of alcohol and cocaine, as they obtained higher scores in the knowledge of the related consequences for these substances, implying that the academic environment is being effective in the construction of such knowledge.

Despite this, it is unclear why the most advanced undergraduates did not present a better understanding of the consequences of using other drugs. One hypothesis is that the course is reproducing content already covered in other contexts. Another possibility is that the way in which such content has been worked on is not being effective in sensitizing students or in facilitating the transformation of information into knowledge.

However, the fact that only the level of knowledge about the consequence of alcohol use was associated with age suggests that the time of exposure to preventive campaigns would not explain a higher level of knowledge about drugs, but probably personal experience or interaction with users would increase awareness of the consequences. Thus, considering that the number of alcohol users is much higher than that of other drugs, older people had much more opportunity to obtain such knowledge through their own life experience.

This finding reinforces the need to rethink the curriculum of nursing undergraduate courses and to identify the gaps in teaching on this topic. Effective

learning requires, first, the student's willingness to learn and, in this regard, the theory of meaningful learning opened up other possibilities and expanded the dimensions of learning, besides expressing the relevance of previous educational or personal experiences to assimilate a new knowledge.

It is important to note that incoming students begin their undergraduate studies already having some understanding on the subject of alcohol and drugs and, given the absence of significant statistical difference between the groups, it is inferred that the learning of the subject is not significant for students. Thus, it is important, to not only strengthen the content being taught throughout the course but also to encourage a positive attitude to learn meaningfully, which requires students to be willing and proactive in replacing established knowledge with new understanding.<sup>22</sup>

Students need not only to internalize the content, but to also to problematize the contexts/situations related to the consequences of the use of alcohol and drugs. The association between theory and practice in classes and simulated activities could bring them closer not only to the theoretical content but also to the context of care, with a view to identifying, in practice, the physical and cognitive consequences of alcohol and drug use. In this regard, simulated activities in the laboratory, with specific services to users of legal and illegal substances, and in the wider family context, would enable the students to develop skills that would assist them in the practical context.

It is worth noting that the situations simulated in the laboratory allow the problematization of the assistance and the development of proposals for solving problems, with the student as the main actor.<sup>23-24</sup> Thinking about how, why and when you learn in this process, and what the implications are in life and in others, can help in the students taking co-responsibility for their learning. In the context of teaching about alcohol and drugs, teachers need to respect the opinions of the students and what the knowledge that they bring. In addition, it is recommended that teachers ought to be empathic and believe in the potential of the student to learn and develop in a free environment. However, teacher support for student development with a view to more positive attitudes towards the practice of

nurses in all care areas, and especially on mental health with alcohol and drugs, is still considered a challenge for the health system.<sup>22,25</sup>

The limitations of the study refer to the sample size that was taken in only one university, reducing the possibility of generalization to a larger public.

## CONCLUSION

Regarding psychoactive substance use, the results of this study show that alcohol and marijuana were the substances most consumed by students. Regarding the understanding of the consequences of alcohol, marijuana and cocaine use, the majority answered 50% of the questions correctly, which is considered a good level knowledge, while 86.5% correctly answered more than half of the questions regarding alcohol, 68.8% for alcohol marijuana and 76.6% for cocaine. Regarding the average scores on the knowledge of the consequences of the use of such substances among first-year and final-year students, a statistically significant difference was found for alcohol and cocaine, and the final-year students obtained higher scores.

The hypothesis that knowledge of the consequences of drug use affects use was confirmed only for marijuana. The results point to the importance of reviewing content taught within the curriculum for undergraduate nursing students. Further studies are needed to identify the cause of the association between the use of psychoactive substances and the knowledge of the consequences of their use.

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