

Original Research Article

CROSS-SECTIONAL ANALYSIS OF THE USE OF LICIT AND ILLICIT DRUGS BY STUDENTS OF THE FEDERAL UNIVERSITY OF RONDÔNIA, PORTO VELHO CAMPUS BETWEEN 2011 AND 2017

ABSTRACT

Aim: To perform a comparative analysis of the pattern of illicit drug use among students at the Porto Velho campus of the Federal University of Rondônia in 2011 and 2017. Study design: This is a cross-sectional and longitudinal study. Place and Duration of Study: Federal University of Rondonia Foundation (UNIR) campus José Ribeiro Filho, Porto Velho – Rondonia (Brazil), 2017. Methodology: The sample in 2017 comprised 352 students divided by knowledge centers, to tabulate and consolidate statistical data the software Statistical Package for the Social Sciences and Microsoft Excel were used, it was considered a 95.0% CI and 0.5% standard deviation. Results: 54.1% of the students are female, the average age is 23 years old, drug use in 2017 increased when compared to 2011, alcohol (from 72.3% to 75.9%), tobacco (from 23.0% to 32.2%), marijuana (from 10.7% to 24.7%), there was a similar effect on cocaine and/or crack, amphetamines and/or ecstasy, inhalants, hallucinogen use, opioids, antipsychotics and antidepressants. Conclusion: **It is observed an increase in drug use by students in 2017 when compared to 2011**, it is expected that the results found in this study may promote strategies of action to prevent and combat drug use among academics.

Keywords: Prevalence; Alcohol drinking in college; Illicit drugs; Controlled substances; Students.

1. INTRODUCTION

For young people, entering higher education can be a critical period, due to the transformations that this phase may cause, such as changes in their way of life, social groups and daily activities, which may cause many to behave in an unhealthy way, including drug use [1].

The World Drug Report notes that approximately 275 million people worldwide aging between 15-64 years old reported having used at least one drug during the year of 2014. Surprisingly, the World Health Organization (WHO) emphasizes that the largest mortality coefficient is attributed to licit drugs, that is, those allowed by current legislation, estimating 450,000 drug-related deaths worldwide in 2015 [2,3].

In Brazil, regarding the use of licit drugs, it is estimated that 24.0% of the population over 18 years old consume alcoholic beverages and 15.0% make use of tobacco, according to data from the National Health Survey (PNS) of 2013. Concerning the deaths registered in 2015, approximately 12.6% occurred due to diseases associated with smoking (chronic obstructive diseases, cardiovascular diseases, pneumonia and cancer) [4].

The second National Alcohol and Drug Survey showed that the substance with the highest prevalence of consumption among Brazilian youth and adolescents was marijuana (5.8%), denoting that 7.8 million people have used the substance at least once in their lives [5].

Currently, the emphasis is on college students, who are mostly young and more prone to drug use, due to multiple factors that range from the need for social acceptance, ease of access, to pressure for positive results in academic performance [6].

According to Brazilian law, **student's** most consumed drugs are classified as licit drugs (such as tobacco and alcohol), and illicit drugs **as for like example** marijuana, cocaine/crack, inhalants, opioids, amphetamines, hallucinogens and others. (IDEA IS NOT CLEAR HERE, MAKE IT EXPLICIT WHAT IDEA ARE YOU TRYING TO CONVEY?)

A survey covering drug use in all the 27 Brazilian state capitals showed that, during life, at least 72.0% of respondents make regular use or have already consumed alcohol, 27.8% tobacco, 13.8% marijuana, 10, 5% amphetamines, 8.4% tranquilizers, and 6.5% inhalants [7].

Drug use among students is a matter of public health concern as there is an increase in different risk factors such as the association of alcohol with driving, increased proliferation of sexually transmitted infections as a result of not using condoms during sexual intercourse, worsening academic performance and development of psychic and pulmonary diseases, in addition to neoplasms [7].

Therefore, the aim of this research was to perform a comparative analysis between the pattern of licit and illicit drug use among students of the Porto Velho campus of the Federal University of Rondonia (UNIR) in 2011 and 2017, in order to understand and identify risk factors that contributed to changes in the consumption profile, with a goal of implementing specific protection and prevention actions and strategies aimed at these students.

2. METHODS

This is a cross-sectional research with a quantitative approach, conducted in 2017 at the Federal University of Rondonia Foundation (UNIR) campus José Ribeiro Filho, in order to enable the analysis of licit and illicit drug use by college students in Porto Velho, based on the comparison with similar data obtained in 2011, by the same research group.

The sample was obtained through stratified probabilistic sampling, divided by course and grouped into clusters according to the teaching core, Health Sciences (NUCSAU), Applied Social Sciences (NUCSA), Technology (NT), Humanities (NCH), Exact and Earth Sciences Nucleus (NCET). Because of a significant difference comparing the number of students belonging to each nucleus, as a way of respecting the proportionality, the percentages of students in each of the referred nucleus and courses were calculated and added adjusted by its size to the overall student base.

A semi-structured and anonymous self-administered questionnaire, adapted both from the model proposed by the World Health Organization (WHO) and the model used by UNESP (State University of São Paulo) was used. The students had to mark their information according to sociodemographics, academics, substance use (tobacco, alcohol, marijuana, cocaine, stimulants, sedatives, inhalants, hallucinogens, and opiates). Finally, the students were given a research consent term, which was read and eventual doubts were clarified.

The data was organized by tabulating the information obtained through the software SPSS (Statistical Package for the Social Sciences), version 24.0, the statistical graphs were performed by Microsoft Excel 2010, the chi-square test (χ^2) was observed, just as a 95.0% confidence interval and a 0.5% standard deviation, the descriptive analysis of the collected data was preceded by the elaboration of the SPSS software database.

The inclusion criteria of the interviewees were: to be a student regularly enrolled at the courses offered by the Federal University of Rondônia, Porto Velho Campus, to accept

participating in the proposed research by complete answering the questionnaire and signing the consent form. The exclusion criteria considered to not being a student at the Federal University of Rondônia, not signing the informed consent form, expressing refusal to participate, inconsistencies with or not completing the questionnaire leading to its discard.

In line with the recommendations of Brazilian National Health Council Resolution 466/12 that considers the participation of individuals in research [8], the research entitled “Study of Alcohol Consumption: From Social Drinking to Problems, Drinking Typification, Traffic, Complication and Treatment, Consequences of Health and Prevention” was submitted to the Research Ethics Committee (CEP) of the Federal University of Rondônia Foundation (UNIR), Campus José Ribeiro Filho, under the opinion number CAAE 48093115.4.0000.5300.

3. RESULTS

The sociodemographic profile, specifically in the variable gender, showed that between 2011 and 2017, there were no significant changes, the female gender remains predominant among respondents, being in 2011 of 56.0%, and 2017 54.1% (Table 1).

It was verified there was no significant difference in the variable “marital status”, except for the increase in singles (79.0% in 2011 to 83.7% in 2017). Besides, in the age distribution of the population, there is an increase in the average age among respondents (21 years in 2011 to 23 years in 2017).

Regarding the number of children, there was a 2.0% variation, with an elevation among those students who did not have children, in 2011, this cohort was 85.0% of the sample, rising to 87.0% in 2017 (Table 1).

Table 1 - Characterization of the sample of UNIR academics for the years of 2011 and 2017

Variable	Year	
	2011	2017
Sex		
Female	56.0%	54.1%
Male	44.0%	45.9%
Teaching core		
NUCSAU	42.0%	16.0%
NUCSA	20.0%	29.0%
NT	18.0%	11.0%
NCH	11.0%	27.0%
NCET	9.0%	17.0%
Marital status		
Single	79.0%	83.7%
Married	12.0%	8.9%
Live with partner	3.0%	6.0%
Divorced	1.0%	4.0%
Widower/Widow	0%	0.3%
Children		
Yes	15.0%	13.0%
No	85.0%	87.0%
Number of children		
1 child	8.0%	6.8%
2 children	3.0%	4.3%

3 to 5 children	2.0%	2.3%
-----------------	------	------

Regarding the prevalence of consumption of licit and illicit substances between the research of 2011 and 2017, respectively, it is noted that the substance with the most frequent consumption was alcohol, with a level of consumption similar in both years studied (72.3% and 75.9%, respectively), followed, in a distant second place, by tobacco, which, although, showed a sharp increase (23.0% and 32.2%, respectively) (Table 2).

The substances with the highest relative increase observed were amphetamines and/or ecstasy, which quadrupled during the study period (1.6% and 7.1%, respectively), followed by opioid analgesics, which tripled (0.7% and 2,3%, respectively) (Table 2).

Also to these, the consumption of marijuana (10.7% and 24.7%, respectively) and hallucinogens (3.4% and 8.0%, respectively) more than doubled comparing both studies. Mark almost reached by hypnotic and/or sedative substances (3.6% and 7.1%, respectively) (Table 2).

In line with the results obtained, a Brazilian nationwide study [7] shows that the drugs most consumed by students are alcohol (86.2%), tobacco (46.7%) and marijuana (26.1%).

Table 2 - Prevalence of licit and illicit substance use among UNIR students for 2011 and

Substance	2017	
	2011	2017
Alcohol	72.3%	75.9%
Tobacco	23.0%	32.2%
Marijuana	10.7%	24.7%

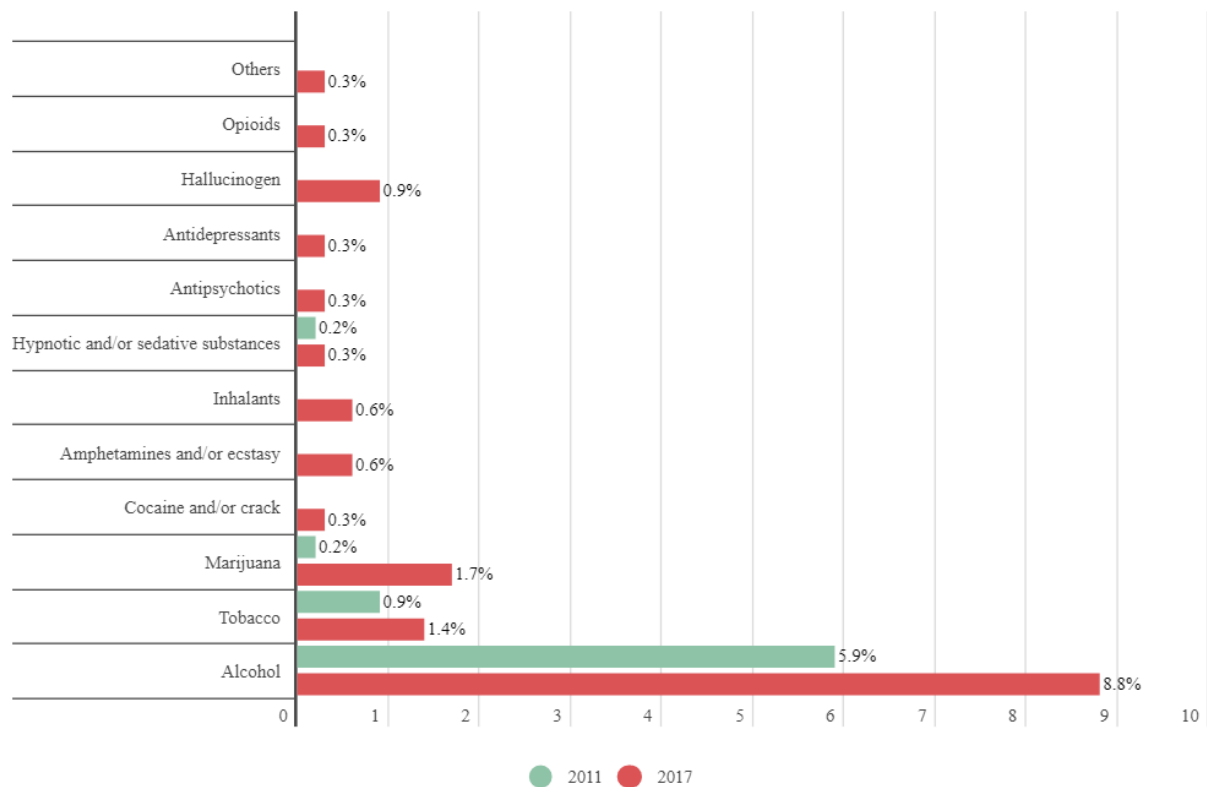
Cocaine and/or crack	3.4%	4.5%
Amphetamines and/or ecstasy	1.6%	7.1%
Inhalants	5.5%	7.4%
Hypnotic and/or sedative substances	3.6%	7.1%
Antipsychotics	-	2.3%
Hallucinogen	3.4%	8.0%
Opioids	0.7%	2.3%
Antidepressants	-	7.1%
Others	3.0%	1.1%

Of the group who reported urgency of monthly consumption in 2011, alcohol represents 5.9%, tobacco 0.9%, marijuana 0.2%, hypnotics and/or sedatives 0.2%. In the 2017 study alcohol represents 8.8%, tobacco 0.9%, marijuana 1.7%, and hypnotics and/or sedatives 0.3%. These are the substances with the highest percentages of consumption, similar numbers compared to the 2011 study (Graph 1).

However, there was an increase observed within the use of alcohol and cannabis, more than that, (?????) as it can be seen in the 2017 study, there was the insertion of new drugs in the universe of academics, specifically cocaine (0.3%), amphetamines and/or ecstasy (0.6%), inhalants (0.6%), antipsychotics (0.3%), antidepressants (0.3%), hallucinogens (0.9%), opioids (0.3%) and other substances (0.3%) (Graph 1).

The insertion of new drugs in the research may be related to the greater opportunity of dialogue about the subject, there's a chance, they are not "new" drugs, they just were only reported in the second moment of the research despite being there all the time.

Graph 1 - Urgency of consumption of licit and illicit substances with monthly periodicity in the last three months, of the academics of the Federal University of Rondônia 2011 and 2017

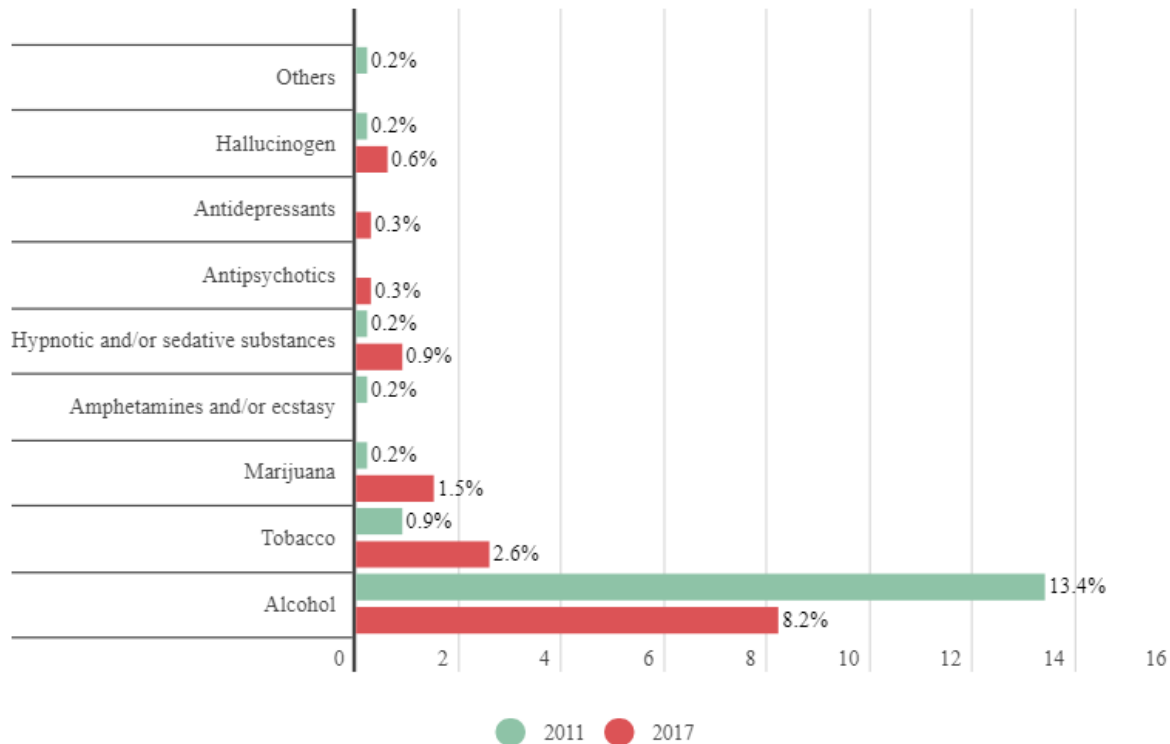


Source: the **author** (Researcher)

When comparing both studies, conducted in 2011 and 2017, alcohol, tobacco, and marijuana remained the most consumed drugs, but we observed in 2017 a significant decrease in weekly alcohol consumption, which went from 13.4% in 2011 to 8.2% in 2017 (Graph 2).

In 2017 there was an important increase in tobacco consumption that was 0.9% during the first survey **and in the second one went to** 2.6%, marijuana from 0.2% to 1.5%, hypnotics and/or sedatives of 0.2% to 0.9%, hallucinogens from 0.2% to 0.6%. It is noteworthy that there was no use of amphetamines and/or ecstasy and other drugs, we can observe absence in both studies of cocaine and/or crack consumption, inhalants and opioids by the academics (Graph 2).

Graph 2 - Urgency of licit and illicit **substances** consumption with weekly periodicity in the last 3 months, of the academics of the State University of Rondônia comparing the years 2011 and 2017



Source: the **author** (Researcher)

In the present study, it is noted that the urgency of consumption of college students in 2017 has increased compared to 2011, the drugs that students **feel** most urgently need in the last 3 months are alcohol, tobacco and marijuana. Another major point in 2017 **is that was observed a growing use of inhalants, hypnotics and/or sedatives, hallucinogens and opioids.**

4. DISCUSSION

The findings of the gender variable are statistically similar to those found at the "I National Survey on the Use of Alcohol, Tobacco, and Other Drugs Among College Students in the 27 Brazilian Capitals." That margin can be explained by evolutions in cultural paradigms, such as reduced fertility rate, later age for female marriages and earlier insertion of men in the labor market, that is, factors that can contribute to a relative increase in education among women [7].

The marital status data based on the interview were corroborate from the “IV National Survey of Socioeconomic and Cultural Profile of Undergraduate Students” in which 86.0% of the students interviewed in 2014 reported being single, and can be attributed to the fact that young people are commonly presenting an average age of 23 years old, another factor to consider is that the financial stabilization is currently seeing as a priority over marriage [9].

Regarding substance use among academics The Social Research Institute of the University of Michigan, through a recent survey, showed that alcohol consumption among college students (79.0%) is higher than consumption among non-college students (75.0%). The use of marijuana (39.0%) and amphetamine (9.8%) are also higher among college students, which may explain the high consumption of these substances in the sample of the present research [10].

Increased consumption of psychotropic drugs, may occur due to great social pressure, in which the hypothesis of any suffering would be against life, in this context, individuals seek these substances to increase attention, concentration, cognitive performance, fight sadness, failure, depression, denial of suffering [11].

Another variable analysed was consumption's urgency, wich is defined by need or strong desire to consume some type of drug. When this impulse is not satisfied, the individual presents diverse symptoms, such as irritability, excessive insomnia, sweating, asthenia, aggression, náusea and lack of interest in their daily activities [12].

Regarding daily consumption, in concordant research to this survey, the University of Western Santa Catarina found that 3.32% of its psychology students felt a strong desire to consume tobacco daily, 2.33% of academics felt this desire once or twice or weekly and 1.0% monthly [13].

The same research shows that alcohol consumption is even stronger, with 14.95% of students feeling this desire to drink once or twice in the last three months, 8.97% weekly, 4.98% monthly and 3.99% daily [13].

5. CONCLUSION

Given the data obtained, it is essential to proceed with a continuous investigation of changes in the pattern of overall illicit and licit drug usage, as the present study only compares the period between the years 2011 and 2017. This recommendation follows both the high consumption and the higher rates of use regarding these drugs, a fact that should be a matter of concern due to the health damage that may cause.

It is important to observe that the increase in the consumption data of these drugs could be explained by the changes in society's paradigms and a greater debate about the subject, resulting in more reliable data and a smaller number of students omitting the use of the substances.

As a possible limitation of the study, the questionnaire had no more "accessible" names of drugs, that is, more widespread names to facilitate the understanding of the students and closer proximity to data that represent reality.

Another difficult aspect while executing the research, was the scarce literature about specific drugs, especially about lean, or purple drank a drug that has been widespread in Brazil, but until now, with few studies on the subject.

ETHICAL APPROVAL

All authors hereby declare that all experiments have been examined and approved by the Research Ethics Committee of Federal University of Rondônia Foundation (UNIR), Campus José Ribeiro Filho, under registration CAAE 48093115.4.0000.5300, and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

REFERENCES

1. Souza Nogueira, M., de Andrade, R. L. B., Mendonça, A. K. R. H., de Jesus, C. V. F., de Souza, L. S. M., & Lima, S. O. Alcohol consumption in medical students and related sociodemographic factors. Research Week at Universidade Tiradentes-SEMPESq. 2016. Portuguese. Accessed 15 February 2019. Available: <https://eventos.set.edu.br/sempesq/article/view/3451/1439>
2. UNODC. World Drug Report 2018 (United Nations publication, Sales No. E.18.XI.9). June 2018. Accessed 15 February 2019. Available: https://www.unodc.org/pdf/opioids-crisis/WDR18_Booklet_3_DRUG_MARKETS.PDF
3. World Health Organization (WHO). WHO's Publications. Geneva: WHO, 2016. Portuguese. Accessed 15 July 2018. Available: <http://www.who.int/eportuguese/publications/en>.
4. BRAZIL. Ministry of Health. National health survey 2013: Perception of health status, lifestyles and chronic diseases. Brasília: Ministry of Health, 2014. Portuguese. Accessed 15 February 2019. Available: <http://www.dive.sc.gov.br/conteudos/agravos/publicacoes/PNS%202013%20Percep%>

C3%A7%C3%A3o%20do%20estado%20de%20sa%C3 % BAde% 20style% 20de% 20life% 20e% 20doen% C3% A7as% 20cr% C3% B4nicas.pdf

5. 5. National Institute of Science and Technology for Public Policy on Alcohol and Other Drugs (INPAD), UNIFESP. II National Survey of Alcohol and Drugs (LENAD) - 2012. Ronaldo Laranjeira (supervision) [et al.]. Sao Paulo. 2014. Portuguese. Accessed 15 February 2019. Available: <https://inpad.org.br/wp-content/uploads/2014/03/Lenad-II-Relat%C3%B3rio.pdf>
6. 6. Zeferino MT, Hamilton H, Brands B, Wright MGM, Cumsille F, Khenti A. Drug use among university students: family influence, spirituality and peer-moderating entertainment. Nursing text context [Internet]. 2015; 24 (Esp): 125-135. Portuguese. Accessed 15 February 2019. Available: <https://www.scielo.br/pdf/tce/v24nspe/0104-0707-tce-24-spe-00125.pdf>. DOI: 10.1590 / 0104-07072015001150014
7. Andrade, A. G .; Duarte, P. C. A. V .; Oliveira, L. G [org.]. I National survey on the use of alcohol, tobacco and other drugs among university students from 27 Brazilian capitals. Brasília: SENAD; OBID; GREA / IPQ-HCFMUSP, 2010. Portuguese. Accessed 15 February 2019. Available: <https://cetadobserva.ufba.br/sites/cetadobserva.ufba.br/files/634.pdf>
8. BRAZIL. Resolution 466, of December 12, 2012. Approve the following guidelines and regulatory standards for research involving human beings. Brasilia. 2012. Portuguese. Accessed 15 February 2019. Available: https://bvsmms.saude.gov.br/bvs/saudelegis/cns/2013/res0466_12_12_2012.html
9. Andifes (BR). Socioeconomic and cultural profile of undergraduate students at Brazilian Federal Universities. National Forum of Pro-Rectors of Community and Student Affairs (FONAPRACE). Brasilia. TC. 2011. Portuguese. Accessed 15 February 2019. Available: http://www.andifes.org.br/wp-content/files_flutter/1377182836Relatorio_do_perfi_dos_estudantes_nas_universidades_federais.pdf
10. Schulenberg JE, Johnston LD, O'Malley PM, Bachman JG, Meich RA, Patrick ME. Monitoring the Future national survey results on drug use, 1975-2016: Volume 2, College students and adults ages 19-55. Ann Arbor: Institute for Social Research, The University of Michigan. 2017. Accessed 15 February 2019. Available: <http://www.monitoringthefuture.org/pubs/monographs/mtf-overview2016.pdf>
11. Brazilian Center for Information on Psychotropic Drugs CEBRID. Set of explanatory leaflets on psychotropic drugs. São Paulo: CEBRID / EPM, s. d. 2014 a. Portuguese.

12. Brazilian Psychotropic Drug Information Center. Informative Booklet on Psychotropic Drugs. Brasília: CIBRID / SENAD; 2014b. Portuguese. Accessed 15 February 2019. Available: <http://cebrid.com.br/wp-content/uploads/2012/12/Livreto-Informativo-sobre-Drogas-Psicotr%C3%B3picas.pdf>

13. Wanscher, D., Prado, G. P., Frigo, J. Use of psychotropics by higher education students. UNINGÁ Review Magazine. 2014. Portuguese. Accessed 15 February 2019. Available: <http://revista.uninga.br/index.php/uningareviews/article/view/1510>

UNDER PEER REVIEW