



Acta Scientiarum. Health Sciences

ISSN: 1679-9291

eduem@uem.br

Universidade Estadual de Maringá
Brasil

de Oliveira Prado Sousa, Bárbara; Stelko-Pereira, Ana Carina; Lopes Chaves, Érika de
Cássia; da Silva Moreira, Denis; dos Santos, Manoel Antônio; Pillon, Sandra Cristina

Drug use and risk factors among school adolescents

Acta Scientiarum. Health Sciences, vol. 39, núm. 2, julio-diciembre, 2017, pp. 233-240

Universidade Estadual de Maringá
Maringá, Brasil

Available in: <http://www.redalyc.org/articulo.oa?id=307252895015>

- How to cite
- Complete issue
- More information about this article
- Journal's homepage in redalyc.org

redalyc.org

Scientific Information System

Network of Scientific Journals from Latin America, the Caribbean, Spain and Portugal

Non-profit academic project, developed under the open access initiative



Drug use and risk factors among school adolescents

Bárbara de Oliveira Prado Sousa^{1*}, Ana Carina Stelko-Pereira², Érika de Cássia Lopes Chaves³, Denis da Silva Moreira³, Manoel Antônio dos Santos⁴ and Sandra Cristina Pillon¹

¹Departamento de Enfermagem Psiquiátrica e Ciências Humanas, Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo, Rua Prof. Hélio Lourenço, 3900, 14040-902, Ribeirão Preto, São Paulo, Brazil. ²Universidade Estadual do Ceará, Fortaleza, Ceará, Brazil.

³Departamento de Enfermagem, Universidade Federal de Alfenas, Alfenas, Minas Gerais, Brazil. ⁴Faculdade de Filosofia, Ciências e Letras de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, São Paulo, Brazil. *Author for correspondence. E-mail: barbara Prado89@hotmail.com

ABSTRACT. This study evaluated the association between risk factors and severity of problems related to drug use in secondary school adolescents. This study had the participation of 1192 students from 6th to 9th year of a city in the South of Minas Gerais, Brazil. Data collection occurred through a questionnaire containing: socio-demographic data and the Drug Use Screening Inventory. Drug use was prevalent in adolescents aged 14 and 15 years, atheist, with good family relationships, living with friends/institutions, attended parties once a month, one or two times a week and three and four times a week. There was main damage in the areas of psychiatric disorders, family system and social competence among those who made use of drugs (except alcohol and tobacco). The results point to the need for implementation of preventive strategies of drug use and health promotion in the school context, whereas consumption was associated with significant damage.

Keywords: vulnerable populations, adolescent health, tobacco, alcoholic beverages, illicit drugs.

Uso de drogas e fatores de risco em adolescentes escolares

RESUMO. Este estudo avaliou a associação entre fatores de risco e intensidade de problemas relacionados ao uso de drogas em adolescentes escolares. Participaram 1192 estudantes do 6º ao 9º ano de um município do sul de Minas Gerais, Brasil. A coleta de dados ocorreu por meio de um questionário contendo: Informações sociodemográficas e o *Drug Use Screening Inventory*. O uso de drogas foi predominante em adolescentes com idade de 14 e 15 anos, ateus, com bom relacionamento familiar, que moravam com amigos/instituições, frequentavam festa uma vez ao mês, de uma a duas vezes por semana, e de três e quatro vezes por semana. Observou-se maiores prejuízos nas áreas transtornos psiquiátricos, sistema familiar e competência social entre os que fizeram uso de drogas (exceto álcool e tabaco). Os resultados apontam à necessidade de implantação de estratégias preventivas do uso de drogas e promoção de saúde no âmbito escolar, visto que o consumo esteve associado a prejuízos significativos.

Palavras-chave: população vulnerável, saúde do adolescente, tabaco, bebidas alcoólicas, drogas ilícitas.

Introduction

Recent evidence suggests the existence of a growing concern about the high rates of use of psychoactive substances in the last decades, especially among adolescents, due to the several consequences that abusive consumption can cause at this stage of development. The World Drug Report [WDR], released in 2015, stated that 246 million people aged 15-64, particularly adolescents, used illicit drugs in 2013. The WDR also showed that the prevalence of global use remained stable over the past three years. However, considering people who have developed a drug-related disorder, only one in six have access to health services that offer specific treatment for this problem (United Nations Office on Drugs and Crime [UNODC], 2015).

Data from the National School Health Survey [PeNSE] in 2009 also presented worrying rates

(Malta et al., 2011). The survey was carried out with 60,973 students from the ninth grade of middle school in Brazilian capitals. The results showed rates of 71.4% for the experimental use of alcoholic beverages and 8.7% for other drugs. The survey also pointed out the great availability and ease of access that adolescents have to purchase alcoholic beverages at parties, bars, commercial establishments and even in their homes. The first Brazilian Drug Report, which evaluated 48,155 of middle school students (from the 6th grade) and middle school, identified that 22.6% used drugs at least once in their lives and 19.6% did so in the last year (Brasil, 2010).

Early experiences and difficulties arising from drug use generally occur during adolescence and result in serious social and health consequences on a global scale. These problems are often influenced by

factors peculiar to this stage of the life cycle. At school level, such factors may modulate risk behaviors that favor substance use by students (Bittencourt, France, & Goldim, 2015).

The potential damages caused by the use of psychoactive substances at this stage of life interfere with the relationship established with the peer group/friends and in school performance (Siciliano, Mezzasalma, & Lorenzoni, 2013; Birhanu, Bisetegn, & Woldeyohannes, 2014), quality of family relationships, social isolation (Bittencourt et al, 2015), mental disorders (Harford, Yi, & Chen, 2015), sexually transmitted diseases (Chatterjee, Tempalski, Pouget, Cooper, Cleland, & Friedman, 2011; Tang, Zhang, Li, Liu, Su, & Shen, 2015) and traffic accidents (Cardoso & Malbergier, 2014a).

The main risk factors for drug use during adolescence have been the early onset of experimental use, rebelliousness, antisocial behavior, tolerant or even supportive attitudes towards drug use, behavioral disorders, the search for relief from negative feelings, and coping difficulties (UNODC, 2015). Another study also pointed to low school performance, risk perceptions for psychoactive substance use, and drug use by siblings' friends (Birhanu, et al., 2014).

Although epidemiological studies have evaluated the prevalence of drug use among adolescents (Brasil, 2009; Malta et al., 2011), in the Brazilian context there are still few studies available in the literature that consistently evaluate the intensity of problems in relation to use of psychoactive substances and their interfaces with health, behavior, psychiatric disorders, sociability, family system, school, work, relationship with friends and leisure/recreation.

The published reports reinforce the need for greater investment in more positive approaches to drug prevention and recognize that adolescents begin to use drugs in psychosocial vulnerabilities contexts that are often largely beyond their control (Brasil, 2009, UNODC, 2015). In addition, identifying the possible factors associated with drug use in this population is of crucial importance for the development of public policies and intervention strategies in order to early identify and minimize the possible ruinous consequences for the adolescents' health and development.

When considering the importance of the topic, this study aimed to evaluate the association between risk factors and the intensity of problems related to drug use in school adolescents.

Material and methods

This is a cross-sectional study. All 14 schools in the municipality were invited to participate in the study, of which 10 were public and four were

private. A private school refused to participate. Thus, the study occurred with students from 13 (93%) middle schools of a medium-sized municipality in the south of Minas Gerais state, Brazil.

Considering the total of 4547 students enrolled in 2013, by means of sample calculation (95% reliability and 2% accuracy), the sample was estimated to be 1,572 students. Regarding sample losses, 270 (17.2%) questionnaires were discarded because they were incomplete and 110 (6.9%) because they were handled in blank. Thus, the sample had 1,192 (75.8%) students. In relation to schools, two were from the countryside and 11 from the urban area of the municipality; eight of which were located on the periphery.

Students were selected according to the established eligibility criteria, namely: being regularly enrolled in 6th through 9th grades of middle school and being present in the classroom at the data collection. Exclusion criteria were: absence in the classroom, after three attempts to data collection, or away for any reason.

In the instrument there were (1) Sociodemographic Information and (2) 'Drug Use Screening Inventory' - DUSI R (De Micheli & Formigoni, 2000).

DUSI R assesses problems related to use of alcohol and/or other drugs among adolescents. This instrument was developed to identify the use of psychoactive substances in the previous month, in response to the practical and objective need of an instrument that efficiently evaluates the problems associated with the use of alcohol and/or other drugs in adolescents (Tarter, 1990).

This inventory was adapted and validated in Brazil (De Micheli & Formigoni, 2000), containing 149 questions divided into ten areas (substance use, behavior, health, psychiatric disorders, social competence, family system, school, work, relationship with friends and leisure/recreation) evaluated in the previous 12 months. The answers are dichotomous (1 = yes or 2 = no). Affirmative responses suggest problems (Tarter, 1990; De Micheli & Formigoni, 2000; Brasil, 2011).

For the DUSI reading, the Absolute Density of Problems (ADP) is calculated, which refers to the intensity of the problem in each area; the Relative Density of Problems (RDP) is the percentage contribution of each area in total problems; and the General Density of Problems (GDP) indicates the severity of the problems in general (Tarter, 1990; De Micheli & Formigoni, 2000). DUSI validation studies showed satisfactory psychometric properties, since the instrument had 80% sensitivity and 90% specificity and 'Cronbach's Alpha' of 0.96 (De Micheli & Formigoni, 2002). The experimental use

of drugs was evaluated by considering the last month before the research. The variables related to the type of drugs were categorized into four groups: (a) alcohol; (b) tobacco; (c) drug use (except alcohol and tobacco); and (d) drug use (alcohol, tobacco and other drugs).

Data collection occurred between August and November 2013, through the students' self-application of the instrument, carried out at the end of the period of the school activities, through prior scheduling and teacher's permission to avoid interfering with class schedules. The time taken to complete the instrument was approximately 50 minutes. All questionnaires were stored in sealed envelopes without identification to guarantee the anonymity of the respondents.

A pilot study was performed to evaluate the understanding of the instrument items, with 10 students of different schooling levels, who were not part of the sample.

The local Research Ethics Committee (Protocol No. 164,696) approved the project. The study followed the norms and ethical procedures proposed in Resolution 466/2012 of the National Council of Ethics in Research involving human beings. The researchers obtained the authorization of the Secretary of Education of the municipality and of

the direction of the institutions involved in the study. All students signed the Term of Assent to participate in the study and the parents or guardians signed the Free and Clarified Consent Term.

A double-typing database was elaborated and the Statistical Package for Social Science (SPSS) version 19.0 performed statistical analysis. For the data analysis, we used descriptive statistics for frequency, mean and standard deviation calculations. Fisher's Exact Test evaluates the relationship between experimental use of drugs and sociodemographic data (sex, age, ethnicity, religion, person(s) who live with, family relationship, party, grade, school location). The independent *T*-test compared the mean values of ADP, RDP, and GDP among the groups of adolescents who had experimental use of drugs. Logistic regression analysis was used to model the Odds Ratio adjusted (OR) probability of an event (experimental drug use) as a function of other factors (sociodemographic characteristics). For all tests, the level of significance was $p < 0.05$.

Results

Table 1 shows the sociodemographic and data information on the experimental use of any type of drug identified in the last month in the sample.

Table 1. Sociodemographic information and experimental use of drugs, according to the students of Middle school, Southern Minas Gerais State, MG. (N = 1192).

		Any type of drugs		Total		p-value
		No use	Use			
		N	%	n	%	
		797	66.8	395	33.1	
Gender	Female	403	50.6	215	54.4	0,116
	Male	394	49.4	180	45.6	
Age ^a	11 to 13 years	579	72.6	151	38.2	<0.001 ^a
	14 to 15 years	218	27.4	244	61.8	
Ethnicity	White	252	47.6	364	54.9	0.020 ^b
	Afrodescendent	277	52.4	299	45.1	
Religion	Catholic	571	71.6	272	68.9	<0.001 ^a
	Spiritism	42	5.3	6	1.5	
	Atheism	8	1.0	19	4.8	
	Evangelicalism	176	22.1	98	24.8	
Participation in parties	1 to 2 times a week	278	34.9	220	55.7	0.001 ^a
	3 to 4 times a week	27	3.4	26	6.6	
	Once a month	355	44.5	133	33.7	
	Other	137	17.2	16	4.1	
Person(s) who live with	Mother and father	509	63.9	201	50.9	0.001 ^a
	Mother	176	22.1	117	29.6	
	Father	41	5.1	32	8.1	
	Friends/Institutions	2	0.3	7	1.8	
Family relationship	Family members	69	8.7	38	9.6	0.001 ^a
	Very good	562	70.5	218	55.2	
	Good	168	21.1	131	33.2	
	Regular, Bad, or Very bad	67	8.4	46	11.6	
Grade	6 th year	277	34.8	58	14.7	0.001 ^a
	7 th year	248	31.1	73	18.5	
	8 th year	135	16.9	105	26.6	
	9 th year	137	17.2	159	40.3	
Type of school	Public	662	83.1	344	87.1	0.042 ^b
	Private	135	16.9	51	12.9	
Location	Urban	755	94.7	385	97.5	0.018 ^b
	Countryside	42	5.3	10	2.5	

Obs.: ^aChi-Square Test, ^bFisher's exact test (value of $p \leq 0.05$).

Of the sample, 1,192 students were predominantly female 618 (51.8%), aged 13 and 14 years 273 (27.9%) both, who attended the 6th year of Middle school 335 (28.1%), white 616 (51.7%), lived in their own house 820 (68.8%), were Catholic 843 (70.7%), attended parties (one to two times a week) 498 (41.8%), lived with parents 710 (59.6%), had a family relationship described as very good 780 (65.4%), came from public schools 1006 (84.4%) and located in urban area 1140 (95.6%).

Regarding drug use, 395 (33.1%) had tried some type of drug, 218 (18.3%) reported experimental use of drugs (except alcohol and tobacco), 284 (23.8%) reported use of alcohol, and 58 (5%) reported use of tobacco in the previous month.

When comparing drug use and sociodemographic characteristics, there were statistically significant differences between the subjects in the sample (Table 1). There was a predominance of experimental drug use among adolescents of public schools ($p = 0.042$), from urban area ($p = 0.018$), aged 14 to 15 years ($p < 0.001$), who attended the 9th grade of Middle school ($p < 0.001$), Afrodescendent ($p = 0.070$), Catholic ($p < 0.001$), who attended parties (once or twice a week) ($p < 0.001$), who described the family relationship as very good ($p < 0.001$) and lived with both parents ($p < 0.001$).

Adolescents with the following characteristics had higher odds ratios for the use of any type of drug: at age 14 (OR = 2.2) and at age 15 (OR = 1.8), atheist (OR = 3.2), have a good family relationship (OR = 1.5). In addition, living with friends increased by 10.8 (OR) times the odds of adolescents to use any type of drugs. It is also observed that the chances of risk increase as adolescents go more frequently to parties once a month (OR = 1.8), once or twice a week (OR = 3.9), three and four times a week (OR = 4.9).

Comparison between ADP, RDP and GDP values and types of psychoactive substances

Drug use

When comparing the mean of absolute density (ADP), relative density (RDP), and general density of problems (GDP) among adolescents who used and did not use drugs experimentally, there were no statistically significant differences between the mean of ADP in the present sample.

However, when comparing the mean RDP values, in 'Area-7 School', the mean score was higher in students who did not use drugs [Mean = 9.4 ± 7.7 ; $t = 2.04$], when compared to those who used drugs [Mean = 8.4 ± 7.6 ; $t = 2.019$], with statistically significant differences ($p < 0.05$).

Likewise, when evaluating 'Area-10 Leisure/recreation', RDP mean was higher among students who did not use drugs [Mean = 11.6 ± 9.8 ; $t = 2.187$], when compared to those who used drugs [Mean = 10.3 ± 8.8 ; $t = 2.267$], with statistically significant differences $p < 0.05$. Finally, there were no statistically significant differences between the GDP means when comparing the sample.

Drug use (except alcohol and tobacco)

When comparing the means of absolute density (ADP), relative density (RDP), and general density of problems (GDP) of the DUSI among students who used or did not use drugs (except alcohol and tobacco) we identified that:

In 'Area-4 Psychiatric Disorders', the highest mean was among students who had used drugs (except tobacco and alcohol) [Mean = 19 ± 17.1 ; $t = -2.267$], when compared to the group of adolescents who did not use drugs (except tobacco and alcohol) [Mean = 22.2 ± 19.2 ; $t = -2.438$], with statistically significant differences $p < 0.05$.

In 'Area-5 Social Competence', we noticed a higher ADP mean, suggesting impairment in students who used drugs (except tobacco and alcohol) [Mean = 26.9 ± 18.7 ; $t = -3.494$] when compared to the group of students who did not use drugs (except tobacco and alcohol) [Mean = 22.1 ± 17.5 ; $t = -3.641$], with statistically significant differences $p < 0.05$.

As for 'Area-6 Family System', the ADP mean was also higher among students who used drugs (except tobacco and alcohol) [Mean 28.7 ± 20.7 ; $t = -1.905$] when compared to the group of students who did not use drugs (except tobacco and alcohol) [Mean 25.8 ± 20.7 ; $t = -1.905$], with statistically significant differences ($p \leq 0.05$).

The RDP mean in 'Area-5 Social competence' was higher for students who used drugs (except alcohol and tobacco) [Mean = 13.1 ± 7.7 ; $t = -2.282$] when compared to students who did not use drugs (except alcohol and tobacco) [Mean = 11.7 ± 8.4 ; $T = -2.151$], with statistically significant differences ($p < 0.05$).

In 'Area-7 School' the RDP mean value was higher for adolescents who did not use drugs (except alcohol and tobacco) [Mean = 9.4 ± 7.7 ; $t = 2.018$] when compared to adolescents who use substance use (except alcohol and tobacco), [Mean = 8.1 ± 7.5 ; $t = 2.045$], with statistically significant differences $p < 0.05$.

When comparing the mean value of general density of problems (GDP) among students who used drugs or not (except alcohol and tobacco), the

mean was higher among students who used drugs (except alcohol and tobacco) [Mean = 28.9 ± 12.3 ; $t = -2.688$] when compared to non-user students (except alcohol and tobacco), [Mean = 26.4 ± 11.7 ; $t = -2.766$], with statistically significant differences $p < 0.05$.

Alcohol use

When comparing the means of ADP, RDP and GDP of DUSI among adolescents who used and did not use alcohol experimentally, there were no statistically significant differences between the means of ADP between users and non-users of alcohol.

When comparing the difference between the RDP mean values, in the 'Area-3 Health', the highest mean was among students who did not use alcohol [Mean = 14.5 ± 11.1 ; $t = 1.887$] when compared to those who used [Mean = 13.1 ± 10.2 ; $t = 1.974$], with statistically significant differences $p < 0.05$.

There were no statistically significant differences between means of alcohol use and GDP.

Tobacco use

When comparing the means with ADP, RDP and GDP of DUSI, and the experimental use or not of tobacco, there were no statistically significant differences between the means of ADP and GDP when comparing the use and non-use of tobacco.

When comparing the difference between the mean RDP values in 'Area-1 Substance' use', the highest mean was among students who did not use tobacco [Mean = 3.7 ± 7.1 ; $t = 1.996$] when compared with adolescents who used tobacco, [Mean = 1.8 ± 4.8 ; $t = 3.269$], with statistically significant differences $p < 0.005$.

Discussion

The study occurred with a representative sample of 1,192 students from Middle school, predominantly white female adolescents (14-15 years old), from the ninth grade of Middle school. In the bivariate analysis, there were strong associations between drug use in the previous month and age (14 and 15 years), ethnicity (Afrodescendent), religion (Catholic), frequent parties (once or twice a week), they lived with both parents, had a very good family relationship, attended the 9th year of public schools, located in the urban zone (Table 1). These results reflect the social and psychosocial vulnerability conditions in which adolescents live.

This study data are in accordance with the literature, especially studies developed with adolescents that showed that age, religion, family

environment and parental rules are often characterized as risk factors, representing potential vulnerability to the use of psychoactive substances (Bittencourt, França, & Goldim, 2015; Zeferino, Hamilton, Brands, Wright, Cumsille, & Khenti, 2015). Evidences also point out that it is very likely that the use of psychoactive substances starts in adolescence (Bava & Tapert, 2010; Cardoso & Malbergier, 2014a) from contact with licit drugs (such as alcohol and tobacco) and for various reasons such as curiosity, pressure from friends, the need for self-affirmation, lack of access to leisure opportunities, and the culture of psychoactive substances use in the family environment. Drug consumption in this stage of life has generated intense concern for healthcare professionals and educators due to their late consequences and biopsychosocial outcomes (interference and negative impact on family relationships, interpersonal relationships and school performance) as well as exposure to various risk behaviors that may result in drug use (Nascimento & De Micheli, 2015).

One of the main findings in the sample was that 33.1% of the adolescents had consumed some type of drug, 23.8% had ingested alcohol, 18.3% had used drugs (except alcohol and tobacco) and 5% used tobacco in the previous month. These results were similar to those presented by the Brazilian drug report, in which the prevalence was 21.1% for alcohol use and 5.5% for tobacco use; the exception was drug use, which in our study had higher rate, and drug use (except alcohol and tobacco), which was only 5.5% (Brasil, 2010). However, when evaluating the use of these psychoactive substances in the city of Belo Horizonte-MG, differences can be observed in the previous month in relation to alcohol use (28%), tobacco (9.2%) and drug use (except alcohol and tobacco) of 9.6% (Brasil, 2010). The variations found in the prevalence indexes of these substances may be influenced by the great sociocultural and demographic diversity that exists in the country, as well as the behavioral changes observed in the last decades in relation to drug use in adolescence (Luis, Pillon, Costa Jr, Ferreira, & Macedo, 2014).

Another interesting finding in our study is that, in multiple analyzes, age (14 and 15 years), religion (atheist), attending parties very often, person(s) who live with (friends) and family relationships (good) were to predict variables for drug use in the previous month among students. These characteristics have also been described in previous studies as potential risk factors for drug use, especially in adolescence (Malbergier, Cardoso, & Amaral, 2012; Cardoso & Malbergier, 2013; Luis et al., 2014; Reis & Oliveira, 2015).

These results suggest the need for greater preventive investment, with the design of strategies of health promotion and/or intervention against drug use in adolescence in school. It should be considered that it is in this evolutionary stage that the first contacts with drugs occur, since there is great availability and easy access, especially alcohol and tobacco at parties. In addition, consumption is also influenced by motivations such as curiosity and pressure from friends, coupled with the idea that behaviors tend to be modified over time and that the drug may be present (Cardoso & Marbegier, 2014b; Brandão, 2015; Reis & Oliveira, 2015).

Regarding religion, atheist students had higher chances of risk ($OR = 3.2$) for drug use in the previous month. Religions that adopt more conservative and rigid norms tend to show less frequency of drug use (Sanchez & Nappo, 2007). Evidence on religion and spirituality has been increasingly considered in studies with various population groups, among them students. In this context, they seem to work, as some studies suggest (Paiva, Souza & Nogueira, 2013; Luis et al., 2014), as a protective factor for consumption. By participating in religious practices, adolescents adhere to a set of values, symbols, behaviors and social practices that favor behaviors of abstinence and prevention of drug use (Abdala, Rodrigues, Brasil, & Torres, 2009). These beliefs and behaviors can positively influence mental health, which may explain the potential risks to drug use in adolescents in this sample, who are not part of any religion.

In this study, we also noticed that as the frequency in party increases, the risks for drug use in the previous month, among adolescents, also increase. Participation in social events such as these, which indiscriminately allow consumption of alcohol (for example, open bar parties), are often part of socializing and interaction rites among adolescents. The study shows that the most popular places to use alcohol have been parties and that friends provide the beverages and often stimulate its intense consumption. This research also pointed out that the first use of alcohol has usually occurred at parties (49.4%) and by influence of friends (46.8%); in this context, drinking has been used as a facilitator of social interaction (Reis & Oliveira, 2015).

In the sample, the risk of drug use increases 1.5 times in adolescents who rated the family relationship as good and in 10.8 times, for those who live with friends or in foster care. Family is considered a fundamental element among risk factors or even protective in relation to drug use. The understanding of good family relationships among adolescents who used drugs (regardless of

their legality) can be considered in three directions, either because they are adolescents who are experiencing substance use out of curiosity (experimental use) and, in fact, have not had problems due to the consumption pattern, or the parents' lack of knowledge about the child's experience with drugs, or the permissiveness of use, in situations in which this approach is interpreted as expected and natural behavior to this phase of life.

Controversially, the literature has pointed out that, generally, living with parents in conflicting families, family disorganization, lack of parental supervision and a family nucleus together with lack of clarity in the rules and poor communication between parents and children contribute potentially to situations that lead the adolescent to search behaviors for drug use, as a means of coping with these problems. Thus, preventive strategies for coping with use should be broadened in order to involve not only adolescents but also their families (Malbergier et al., 2012).

As for the problems assessed by the DUSI, the areas Psychiatric Disorders, Family System and Social Competence were the most affected in adolescents who used drugs (except alcohol and tobacco) in the previous month. However, there was no association between the use of any type of drugs, alcohol and tobacco in relation to their respective densities.

In this sample, adolescents who used drugs (except alcohol and tobacco) in the previous month had greater losses in the Psychiatric Disorders area. The association between drug use and psychiatric disorders in adolescence is very common, since the use of psychoactive substances may influence the manifestation of mental disorder symptoms, but the reverse is also true. The main problems reported in the literature are anxiety, depression, behavior and relationship problems with colleagues, attention deficit and hyperactivity (Bukstein, Glancy, & Kaminer, 1992; Lopes & Resende, 2013). On the other hand, it is necessary to consider that this association can be an attempt of adolescents to alleviate the psychological distress, since the increase of social pressure is characteristic of this stage of the life cycle.

A study of 12 to 17 year-old school adolescents from Venezuelan public schools showed positive associations between drug use (licit and illicit) and DUSI areas: Psychiatric Disorders (63%) and Family (80%), with greater losses (Rebolledo, Medina, & Pilon, 2004).

In this study, losses in the family system area (DUSI-R) were also prevalent in adolescents who used drugs (except alcohol and tobacco) in the

previous month. These data corroborate the literature findings, which show a greater presence of family problems in students who had used alcohol, tobacco and illicit drugs (Malbergier et al., 2012). These authors consider that the family environment significantly influences the onset and maintenance of substance use.

A study carried out in Spain with 1428 school adolescents aged 11 to 19 years, found that adolescents who considered their parents more permissive, less mothers' control and higher levels of maternal and paternal affection were more likely to use alcohol, tobacco and Marijuana (Becoña et al., 2013). Evidence suggests the importance of achieving a balance between parental control and the provision of affection towards children, since lack of parental monitoring has been described as one of the potential family risk factors for drug use among adolescents (Becoña, Martínez, Calafat, Juan, Duch, & Fernández-Hermida, 2012; Cano, Solanas, Mari-Klose, & Mari-Klose, 2012).

In this study, adolescents who had used drugs (except alcohol and tobacco) also had greater impairment in Social Competence. It is believed that the greater the losses in social skills, coping with conflicting situations and assertiveness in adolescents, the greater the risks of using drugs of abuse. This is a very complex topic, since it involves the evaluation of social skills and their interactions (with peers, family members, teachers and others); however, it has still been an unexplored topic in the literature. On the other hand, early identification of problems in this area favors the planning of punctual interventions for adolescents who have coping difficulties with social skills even before drug use begins (Cardoso & Malbergier, 2013).

The study has some limitations. First, it is an epidemiological, exploratory study that assesses the potential risks for drug use among adolescents and it is not possible to establish the cause-and-effect direction. Second, the findings should be carefully evaluated to be compared with the results obtained in other studies, because although there was a representative sample of school adolescents, which is a strong point of this study, this sample was restricted to the evaluation of only a medium-sized Brazilian municipality. Thus, other studies are necessary, with the use of other methodological approaches and with themes directed to family variables, social skills and coping with adolescents of school age.

Conclusion

The use of psychoactive substances in adolescence is a public health problem, with several

biopsychosocial repercussions and implications on the lives of future adolescents and adults. This study presents important elements about the association between risk factors and the intensity of problems related to drug use in school adolescents, since the psychological, biological and social vulnerabilities related to drug use could cause harm in several areas. The findings may contribute to the rethinking of systematization and operationalization of preventive and educational public policies to coping with drug use in schools. However, partnerships established between family members, health and education professionals should be established in this context so that the use of alcohol and/or other drugs and their consequences are minimized.

References

- Abdala, G. A., Rodrigues, W. G., Brasil, M. S., & Torres, A. (2009). A religiosidade/espiritualidade como influência positiva na abstinência, redução e/ou abandono do uso de drogas. *Revista Formadores*, 2(3), 447-460.
- Bava, S., & Tapert, S. F. (2010). Adolescent brain development and the risk for alcohol and other drug problems. *Neuropsychology review*, 20(4), 398-413.
- Becoña, E., Calafat, A., Fernández-Hermida, J. R., Juan, M., Sumnall, H., ... & Gabrhelik, R. (2013). Parental permissiveness, control, and affect and drug use among adolescents. *Psicothema*, 25(3), 292-298.
- Becoña, E., Martínez, Ú., Calafat, A., Juan, M., Duch, M., & Fernández-Hermida, J. R. (2012). ¿Cómo influye la desorganización familiar en el consumo de drogas de los hijos? Una revisión. *Adicciones*, 24(3), 253-268.
- Birhanu, A. M., Bisetegn, T. A., & Woldeyohannes, S. M. (2014). High prevalence of substance use and associated factors among high school adolescents in Woreta Town, Northwest Ethiopia: multi-domain factor analysis. *BMC Public Health*, 14(1), 1186.
- Bittencourt, A. L. P., França, L. G., & Goldim, J. R. (2015). Adolescência vulnerável: fatores biopsicossociais relacionados ao uso de drogas. *Revista Bioética*, 23(2), 311-319.
- Brandão, M. M. R. T. (2015). A formação humana na adolescência numa perspectiva do não uso de drogas. *Revista Polyphonia*, 24(1), 117-134.
- Brasil. Secretaria Nacional de Políticas sobre Drogas. (2010). *VI Levantamento nacional sobre o consumo de drogas psicotrópicas entre estudantes do ensino fundamental e médio das redes pública e privada de ensino nas 27 capitais brasileiras*. Brasília, DF: SENAD.
- Brasil. Secretaria Nacional de Políticas sobre Drogas. (2009). *Relatório brasileiro sobre drogas*. Brasília, DF: SENAD.
- Brasil. Secretaria Nacional de Políticas sobre Drogas. (2011). *Sistema de detecção do uso abusivo e dependência de substâncias psicoativas: encaminhamento, intervenção breve, reinserção social e acompanhamento*. Brasília, DF: SENAD.

- Bukstein, O. G., Glancy, L. J., & Kaminer, Y. (1992). Patterns of affective comorbidity in a clinical population of dually diagnosed adolescent substance abusers. *Journal of the American Academy of Child & Adolescent Psychiatry*, 31(6), 1041-1045.
- Cano, A. J., Solanas, S. E., Marí-Klose, M., & Marí-Klose, P. (2012). Factores de riesgo psicosociales en el consumo de tabaco de los adolescentes: estados de ánimo negativos, grupo de iguales y estilos parentales. *Adicciones*, 24(4), 309-317.
- Cardoso, L. R. D., & Malbergier, A. (2013). Habilidades sociais e uso de álcool, tabaco e drogas ilícitas em adolescentes. *Psicologia Argumento*, 31(75), 761-768.
- Cardoso, L. R. D., & Malbergier, A. (2014 a). School problems and the consumption of alcohol and other drugs among adolescents. *Psicologia Escolar e Educacional*, 18(1), 27-34.
- Cardoso, L. R. D., & Malbergier, A. (2014 b). A influência dos amigos no consumo de drogas entre adolescentes. *Estudos de psicologia*, 31(1), 65-74.
- Chatterjee, S., Tempalski, B., Pouget, E. R., Cooper, H. L., Cleland, C. M., & Friedman, S. R. (2011). Changes in the prevalence of injection drug use among adolescents and young adults in large US metropolitan areas. *AIDS and Behavior*, 15(7), 1570-1578.
- De Micheli, D., & Formigoni, M. L. O. (2000). Screening of drug use in a teenage Brazilian sample using the Drug Use Screening Inventory (DUSI). *Addictive Behaviors*, 25(5), 683-691.
- De Micheli, D., & Formigoni, M. L. O. (2002). Psychometric properties of the Brazilian version of the Drug Use Screening Inventory. *Alcoholism: Clinical and Experimental Research*, 26(10), 1523-1528.
- Harford, T. C., Yi, H. Y., Chen, C. M., & Grant, B. F. (2015). Psychiatric symptom clusters as risk factors for alcohol use disorders in adolescence: a national study. *Alcoholism: Clinical and Experimental Research*, 39(7), 1174-1185.
- Lopes, A. P., & Rezende, M. M. (2013). Anxiety and the use of psychoactive substances among adolescents. *Estudos de Psicologia*, 30(1), 49-56.
- Luis, M. A.V., Pillon, S. C., Costa Jr, M. L. C., Ferreira, P. S., & Macedo, J. Q. (2014). Padrão de uso de substâncias psicoativas por estudantes – Ribeirão Preto. *Saúde em Debate*, 38(102), 515-525.
- Malta, D. C., Mascarenhas, M. D. M., Porto, D. L., Duarte, E. A., Sardinha, L. M., ..., Moraes Neto, O. L. D. (2011). Prevalência do consumo de álcool e drogas entre adolescentes: análise dos dados da Pesquisa Nacional de Saúde Escolar. *Revista Brasileira de Epidemiologia*, 14(1), 136-146.
- Malbergier, A., Cardoso, L. R. D., & Amaral, R. A. (2012). Uso de substâncias na adolescência e problemas familiares. *Cadernos de Saúde Pública*, 28(4), 678-688.
- Nascimento, M. O. D., & De Micheli, D. (2015). Avaliação de diferentes modalidades de ações preventivas na redução do consumo de substâncias psicotrópicas em estudantes no ambiente escolar: um estudo randomizado. *Ciência & Saúde Coletiva*, 20(8), 2499-2510.
- Paiva S., R., Souza, P., Nogueira, D. A., Silva Moreira, D., & Chaves, E. D. C. L. (2013). Relação entre bem-estar espiritual, características sociodemográficas e consumo de álcool e outras drogas por estudantes. *Jornal Brasileiro de Psiquiatria*, 62(3), 191-198.
- Reis, T. G. D., & Oliveira, L. C. M. D. (2015). Padrão de consumo de álcool e fatores associados entre adolescentes estudantes de escolas públicas em município do interior brasileiro. *Revista Brasileira de Epidemiologia*, 18(1), 13-24.
- Rebolledo, E. A. O., Medina, N. M. O., & Pillon, S. C. (2004). Fatores de riscos associados ao uso de drogas entre estudantes adolescentes. *Revista Latino-Americana de Enfermagem*, 12(spe), 369-375.
- Sanchez, Z. V. D. M., & Nappo, S. A. (2007). A religiosidade, a espiritualidade e o consumo de drogas. *Archives of Clinical Psychiatry*, 34(Suppl. 1), 73-81.
- Siciliano, V., Mezzasalma, L., Lorenzoni, V., Pieroni, S., & Molinaro, S. (2013). Evaluation of drinking patterns and their impact on alcohol-related aggression: a national survey of adolescent behaviours. *BMC Public Health*, 13(1), 950.
- Tang, Z., Zhang, C., Li, X., Liu, Y., Su, S., & Shen, Z. (2015). HIV risk among female sex workers with different patterns of drug use behaviors in Southwest China: a cross-sectional study. *AIDS Care*, 27(3), 293-300.
- Tarter, R. E. (1990). Evaluation and treatment of adolescent substance abuse: A decision tree method. *The American Journal of Drug and Alcohol Abuse*, 16(1-2), 1-46.
- United Nations Office on Drugs and Crime [UNODC]. (2015). *World Drug Report 2015*. Viena, AT: United Nations Office on Drug and Crime. Division for Police Analysis and Public Affairs.
- Zeferino, M. T., Hamilton, H., Brands, B., Wright, M. D. G. M., Cumsille, F., & Khenti, A. (2015). Drug consumption among university students: family, spirituality and entertainment moderating influence of pairs. *Texto & Contexto - Enfermagem*, 24(spe), 125-135.

Received on June 29, 2016.

Accepted on November 9, 2016 .

License information: This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.