PSYCHOTROPIC DRUG USE AMONG TEENAGE PUBLIC SCHOOL STUDENTS

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ABSTRACT: The aim of this study was to identify the association between socio-demographic characteristics and use of alcohol and other drugs by teenage public school students. This was an exploratory study, conducted in the first half of 2014. A total of 480 public school students from the municipality of Divinópolis, in the Brazilian state of Minas Gerais, were selected to participate in the study by non-probabilistic sampling. The participants responded individually to a questionnaire prepared by the authors and the Drug Use Screening Inventory. Analysis was by descriptive and bivariate statistics. The results showed a predominance of male users (51.9%), with family income 1-2 times the minimum wage (52.7%). Analgesics (43.9%) were the primary drugs used, followed by alcohol (39.5%) and tobacco (9.7%). As for variables that favored drug use, lack of leisure and recreation activities had the highest frequency of reported problems. The findings of this study indicate the need to implement policies aimed at comprehensive health care for adolescents, especially cultural, sporting, leisure and professional training activities, as well as measures to prevent the use and abuse of alcohol and other drugs.
DESCRIPTORS: Primary health care; Substance abuse detection; Adolescent behavior; Mental disorders.

USO DE DROGAS PISCOTRÓPICAS POR ADOLESCENTES DE ESCOLAS PÚBLICAS

RESUMO: Objetivou-se identificar a associação entre características sociodemográficas e o uso de álcool e outras drogas por adolescentes de escolas públicas municipais. Pesquisa exploratória, realizada no primeiro semestre de 2014. Participaram 480 escolares em Divinópolis, Minas Gerais, selecionados por amostra não-probabilística, que responderam individualmente a um questionário elaborado pelos autores e ao *Drug Use Screening Inventory*. A análise ocorreu pela estatística descritiva e bivariada. Os resultados apontaram a predominância do sexo masculino (51,9%), com renda familiar de 1 a 2 salários mínimos (52,7%). Usam analgésicos (43,9%), álcool (39,5%) e tabaco (9,7%). Quanto às variáveis que favoreciam o uso de drogas, a escassez de lazer e recreação apresentaram a maior frequência entre problemas relatados. Os achados indicam a necessidade da implementação de políticas voltadas à saúde integral dos adolescentes, em especial às atividades culturais, esportivas, laborais e lúdicas, como medidas na prevenção e enfrentamento ao uso e abuso de álcool e outras drogas.
DESCRITORES: Atenção primária à saúde; Detecção do abuso de substâncias; Comportamento do adolescente; Transtornos mentais.

USO DE DROGAS PISCOTRÓPICAS POR ADOLESCENTES DE ESCUELAS PÚBLICAS

RESUMEN: La finalidad del estudio fue identificar la asociación entre características sociales y demográficas y el uso de alcohol y otras drogas por adolescentes de escuelas públicas municipales. Investigación exploratoria, realizada en el primero semestre de 2014. Participaron 480 escolares en Divinópolis, Minas Gerais, seleccionados por muestra no probabilística, que contestaron individualmente a un cuestionario elaborado por los autores y al Drug Use ScreeningInventory. El análisis ocurrió por la estadística descriptiva y bivariada. Los resultados apuntaron la predominancia del sexo masculino (51,9%), con renta familiar de 1 a 2 salarios mínimos (52,7%). Usan analgésicos (43,9%), alcohol (39,5%) y tabaco (9,7%). Cuanto a las variables que favorecían el uso de drogas, la escasez de ocio y recreación presentaron la mayor frecuencia entre problemas relatados. Los resultados indican la necesidad de la implementación de políticas para la salud integral de los adolescentes, en especial las actividades culturales, esportivas, laborales y lúdicas, como medidas en la prevención y afrontamiento al uso y abuso de alcohol y otras drogas.
DESCRIPTORES: Atención primaria a la salud; Detección del abuso de substancias; Comportamiento del adolescente; Trastornos mentales.

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INTRODUCTION

The abuse of alcohol and drugs is considered a major public health problem worldwide, and has drawn the attention of health authorities in different countries. According to the World Health Organization (WHO), the main characteristic of substance abuse is an altered physical and mental state resulting from ingestion of chemicals, leading to behavioral reactions that include compulsion to continuous or periodical ingestion of the substance. The main reason for consuming a drug is to experience the physical effects it causes, and avoid discomfort caused by its lack[1].

The use and abuse of alcohol and drugs is considered one of the ten greatest risks to health, and annually is the cause of death of 1.8 million people worldwide, 5% of which are young people aged between 15 and 29 years. Data show that many people do not have a balanced relationship with chemical substances[2-3].

A Brazilian study showed that 12.3% of people aged between 12 and 65 years have some type of chemical dependency, with a prevalence of 17.1% among men and 5.7% among women. Other studies conducted in Brazil and abroad have shown that the earlier one starts to use alcohol and/or drugs, the greater the risk of becoming dependent and having medical problems and other negative consequences. Use of alcohol and other drugs also increases likelihood of hospitalization, accident, fight, murder, suicide and unprotected sex[4-5].

Data from the most recent National Survey on Addiction undertaken in Brazil showed that 55.6% of the population aged over 18 years had consumed alcohol frequently in the last twelve months. Dramatic increases in rates of alcohol consumption among teenagers were also observed: in 1999, 35% of this population consumed alcohol, whereas in 2001 this rate had risen to 48%. Problems related to alcohol consumption were reported by 4% and 10% of respondents in the age groups 12-17 and 18-25 years, respectively[6-9].

Different authors point out that in most cases, experimentation with alcohol and/or drugs by adolescents is associated with the natural instinct of a being "in a peculiar stage of development: curiosity, imitation, self-affirmation." There are other causes related to self-destructive psychological processes of individual, family or social origin, and the urge to break rules, revolt against everything, social or economic oppression or even mental illness[7,9].

Data from the United Nations (UN) suggest that most young people get involved with alcohol and/or drugs due to lack of information. In search of their own identity, adolescents often adopt inappropriate behavior, influenced by friends or acquaintances, use substances without understanding the damage they cause, and eventually become addicts.

Given the importance of this topic, and in order to contribute to the production of knowledge about the harm caused by alcohol and drug use by adolescents, the aim of this study was to identify the association between socio-demographic characteristics and use of alcohol and other drugs among teenage public school students.

METHODOLOGY

This was an exploratory and cross-sectional study, conducted with adolescent students from two public schools located in the city of Divinópolis, in the southeastern Brazilian state of Minas Gerais, which combined have about 600 students enrolled, of which 500 are adolescents. The two schools are considered by the Municipal Secretary of Education as the largest public schools in the city, and are responsible for the primary education of children aged between 6 and 11 years, and middle and high school education of teenagers aged between 12 and 18 years. Most of the students came from neighborhoods located on the outskirts of the city, in areas that lack basic infrastructure and leisure areas.

Inclusion criteria were acceptance to participate in the study; having completed and signed the free and informed acceptance form (FIAF); having the signature of a legal guardian on the free and informed consent form (FICF); and, being a student of one of the two schools for at least six months. Exclusion criteria were erroneous or incomplete filling out of the FIAF, FICF or study questionnaires.

All 500 (100%) adolescent students from both schools were invited to participate in the study. The final sample consisted of 480 (96%) students, due to unanswered or incomplete questionnaires.

Two questionnaires were used to collect data, one of which was created by the authors of the study to gather socio-demographic data (gender, age, religion, race, parental presence and family income). The other questionnaire used was the

Drug Use Screening Inventory (DUSI), developed in the United States and adapted to the Brazilian population (*Inventário de Triagem do Uso de Drogas*)[10]. The DUSI is directed especially to the adolescent population, of public domain and free of charge for use.

It is noteworthy that the DUSI consists of an initial table that addresses frequency of consumption of 13 classes of psychoactive substances, followed by 149 questions divided into ten areas, that provide a profile of the intensity of problems related to substance use, behavior, health, psychiatric disorders, sociability, family system, school, work, relationships with friends and leisure/recreation. The questions were answered with "yes" or "no", and positive answers indicated the presence of problems. In addition to the ten areas mentioned above, the DUSI has a "lie scale", consisting of ten questions (one at the end of each area), that were used to check for possible invalid questionnaires[10].

Data were collected during the first half of 2014, after it was approved by the Human Research Ethics Committee of the Hospital São João de Deus, under Opinion No. 59/2013. The instruments were responded to individually by students in the morning and evening class shifts, in a private place, and only in the presence of one of the researchers. The average time to fill out the questionnaire was 30 to 40 minutes. Each step of the study was described to respondents in a simple manner with use of easily understandable vocabulary. After filling out the questionnaires, the students were asked to deposit them in a box, thereby preserving the anonymity and identity of each participant.

Data were entered into a Microsoft Excel spreadsheet, using the dual input technique. The data were then exported to the Statistical Package for the Social Sciences (SPSS) software, version 15.0, by which statistical significance was determined, Person's chi-square (x2) was calculated, and association between the variables of the participants was quantified. Logistic regression modeling was used for analysis of drug use by calculating the gross and adjusted odds ratios (OR) for all covariates. Evidence of association at the significance level of 0.05 was observed if the value 1 was not contained in the confidence intervals. The variables "grade", "living together" and "relationship" were used as the control to estimate the adjusted OR. Finally, the level of problems from drug use was established based on scores generated by the DUSI, by which four indices could be calculated: 1) absolute density of problems, which indicated the intensity of problems in each area individually; 2) relative density of problems, which indicated the percentage contribution of each area in total problems; 3) overall density of problems, which indicated the overall intensity of problems; and 4) lie scale, which reflected the reliability of responses provided[10].

RESULTS

In the characterization of the participants, the high number of adolescents who reported using drugs, independent of sex, age, religion, race and other variables stood out, as shown in Table 1.

In the total sample analysis, the sexes were almost equally distributed, with 51.9% males and 48.1% females. Among the male students, 50.5% affirmed using drugs, whereas 44.9% of females did, with a statistical trend of p=0.011. Participants' mean age was 13.03 years (SD=0.99 years), and drug use was higher among students aged 16 to 18 years (p>0.005). With regard to religion, participants with the highest percentage of drug use (p=0.000, X2=30.01) were Catholic (47.7%).

As for race, the highest percentage of drug use was observed among Asian adolescents (68.5%), followed by those who self identified as black (38.7%). Regarding parental presence, the highest rate of drug use occurred with adolescents who reported living only with their father (76.4%), followed by those who reported not living with either their father or mother (71.4%), and those who lived only with their mother (59%) (p<0.005). The family income of 50.1% of students who had used drugs was between 1-2 minimum wages, whereas 29.2% reported a family income of between 3-4 minimum wages (p>0.005).

The drugs most used by the participants were analgesics (43.9%), alcohol (39.5%), and tobacco (9.7%). The use of inhalants/solvents (3.9%) was also reported, as well as marijuana (3.9%), amphetamines (3.7%) and tranquilizers (3.7%) and, to a lesser percentage, cocaine, anabolics, opiates and hallucinogens. It is noteworthy that the frequency of use was mostly experimental, and 93% of adolescents reported that they had used drugs at the rate of one to two times in the last month. Among the main factors identified for drug use were curiosity, not knowing why, peer pressure and pleasure (p<0.005).

In evaluation of participants with the DUSI questionnaire, it was possible to identify the profile of intensity of problems related to drug

Table 1 - Logistic regression for drug use, according to socio-demographic information of 480 students from public schools. Divinópolis, Minas Gerais, Brazil, 2014

	Characterization		Drug use				Odds Ratio	
Variables	Adolescence		No		Yes		Gross OR CI (95%)	Adjusted OR CI (95%)
	n	%	n	%	n	%		
Sex								
Female	227	48.1	125	55.1	102	44.9	-	-
Male	253	51.9	125	49.5	128	50.5	1.531 (1.016; 2.30)	1.299 (0.835; 2.02)
Age								
10 to 12	177	36.8	107	60.5	70	39.5	-	-
13 to 15	280	58.3	142	50.8	138	49.2	-	-
16 to 18	23	4.9	01.	4.4	22	95.6	3523 (2.024; 311)	2.685 (1.324; 302)
Religion								
Catholic	354	73.7	185	52.3	169	47.7	1.736 (1.242; 15.2)	1.826 (1.932; 3.33)
Evangelical	77	16.1	42	54.6	35	45.4	-	-
Spiritist	10	2.1	6	60	4	40	-	-
Other	39	8.1	17	43.6	22	56.4	-	-
Race								
White	196	40.8	120	61.3	76	32.2	-	-
Black	31	6.5	21	67.8	10	38.7	2.112 (1.32;3.37)	2.169 (1.318;3.57)
Mulatto / Mixed	72	15.0	60	83.4	12	16.6	-	-
Asian	181	37.7	57	31.5	124	68.5	2.413 (1.347;4.32)	2.193 (1.171;4.10)
Parental presence								
Father and mother	356	74.2	203	57.1	153	42.9	-	-
Only the mother	100	20.8	41	41	59	59	1.488 (0.731; 3.02)	1.432 (0.662; 3.09)
Only the father	17	3.5	4	23.6	13	76.4	2.481 (0.408; 15.0)	1.01 (0.158; 6.45)
Neither mother nor father	7	1.5	2	28.6	5	71.4	1.815 (1.011; 3.25)	1.96 (1.041; 3.68)
Family income								
1-2 minimum wages	253	52.7	126	49.9	127	70.8	4.827 (1.169; 19.9)	2.766 (0.618; 12.3)
3 to 4 minimum wages	158	32.9	46	29.2	112	50.1	3.851 (2.107; 703)	2.825 (1.136; 7.02)
5 to 6 minimum wages	63	13.1	40	63.5	23	36.5	-	-
7 or more minimum wages	6	1.3	4	66.7	2	33.3	-	-

use, and establish the absolute density of these problems, which indicated the intensity of how they affected every individual area of each participant's life (behavior, health, emotional state, social skills, family system, academic situation, work situation, interpersonal relationships and leisure/recreation). The relative density of problem indicated the percentage contribution of each area on total problems.

Table 2 shows the distribution of the sample of adolescents according to the intensity of problems.

The DUSI reflected the intensity of problems in each area individually, in addition to relative density, which showed the percentage contribution of each area on total problems. The areas with the highest rates of problems that predispose adolescents to drug use were interpersonal relationships, behavior and leisure/recreation. As for overall density of problems, the results again showed the highest rates in the areas of interpersonal relationships and leisure/recreation. The lie scale did not identify any invalid questionnaires, so all data collection instruments were filled out correctly.

Table 2 - Description of problems in relation to drug use by 480 adolescents from public schools, according to the Drug Use Screening Inventory. Divinópolis, Minas Gerais, Brazil, 2014

	Absolute density of problems				Relative density of problems			
Areas of the DUSI	Minimum	Maximum	Mean	Standard deviation	Minimum	Maximum	Mean	Standard deviation
Behavior	0	90.5	26.4	18.8	0	100	12.6	9.9
Health status	0	100	24.8	18.1	0	100	11.4	9.4
Emotional state	0	81	23.8	18.1	0	50	10.1	6.1
Social competence	0	86.7	26.3	18.3	0	49.0	12.1	7.1
Family system	0	86.7	22.9	18.7	0	50	9.9	6.7
School situation	0	81	23.1	16	0	100	11.	7.1
Work situation	0	72.7	9.6	11	0	34.6	4.1	4.3
Interpersonal relationship	0	93.3	25.1	19.7	0	51.7	11.1	7
Leisure & recreation	0	130.8	28.8	18.8	0	56.5	13.7	8.3

DISCUSSION

The evidence showed that the use of psychoactive substances is much more common among males than females. According to the literature, the use of "heavier" drugs such as cocaine, glue and amphetamines is more common among men[11-12]. These findings represent challenges to comprehensive health care of men, and serve as a reference for other studies to deepen understanding of the topic, including discussion on gender.

The social construction of masculinity often encourages boys to prove their courage at a time in life in which young people without information, and conditioned to the standard of masculinity, adopt behavior that is damaging to their health. In contrast, girls tend to act differently from boys; because they are considered socially fragile, they are placed in a protective position, which naturally leads them to avoid risky situations in which their health may be affected[13-14].

One study conducted with adolescents in southern Brazil identified greater use of tobacco by females, whereas alcohol consumption was higher among males. Therefore, the consumption of tobacco and alcohol is common among teenagers, regardless of sex. Studies warn that individuals who drink alcohol are more prone to use illicit drugs, which demonstrates the predisposing factor that alcohol plays in inducing use of illegal substances[13,15].

It is worrisome that the age of onset of substance use is between 10 and 12 years, and the main reason is curiosity, as found in the present study. The authors of the present study emphasize health education as a means to encourage the promotion of mental health through information on the harmful effects of use and abuse of alcohol and other drugs. It is noteworthy that the results coincide with other studies, which also highlighted motivating factors for immersion in the world of drugs, such as the need to identify with new friends and unstable family structures, as well as curiosity to experience the effects of both alcohol and illegal drugs[12,14,16].

One national study[8] pointed out that 55% of Brazilian adolescents have already used alcohol, whereas for tobacco this value is 18.4%, data that coincide with the findings of the present study. According to another study[16], the use of psychoactive substances was common among adolescents in the age group of 15 to 19 years, and was relatively high among adolescents aged 10 to 14 years, of which 45.9% affirmed having used alcohol, 2.4% affirmed having used marijuana, and 3.7% affirmed having used other illicit drugs such as cocaine, crack and ecstasy.

The responsibility of manufacturers of legal substances such as alcoholic beverages and tobacco should also be emphasized, as companies increasingly use media and marketing to advertise their products. This daily presence in news and entertainment spaces, such as online social networks and sports programs, makes the subject of drugs very complex. If on the one hand discourses are promoted to build a negative image of drugs, on the other hand, many others build positive images of the same substances. The media conveys extremely favorable images of legal drug use, using famous people considered

beautiful and successful, that promote use of alcohol and tobacco, and relate these to sociability and sexuality.

With regard to drug use and religion, although in this study all teenagers declared themselves to be adherents of some religious practice, this factor was not shown to be a protective factor against drug use. Thus, the protective effect of religion may be related to joining and effectively participating in a religion, valuing religious teachings, belief in God and prayer in the face of difficulty, as opposed to merely being an adherent of some religion[10,17].

Studies[9,12,15] on the relationship between religion and drug use point to higher consumption of psychoactive substances among students with less belief in God and those who engage less frequently in religious practices. These studies also suggest that religiosity, as expressed by the practice of a belief system, slows experimenting with drugs, and positively influences less frequent use after experimentation.

With regard to race, the results showed a higher number of adolescent drug users who self-identified as being of Asian descent, followed by those of African descent or "black". This finding is in contrast to the results of other studies[14, 16-17], which found blacks to be the primary group of users, followed by mixed race/brown. It should be noted that racial issues are still very linked to Brazil's cultural heritage of slavery and segregation, that permeated the country's colonization and development process. The legacy of slavery relegated part of the population - those of African descent - to poverty, a fact reinforced in this study, which found that the majority of adolescent drug users are from families with monthly income of up to two minimum wages, and are residents in peri-urban areas on the outskirts of the city, in areas lacking basic infrastructure (clean water, sewage system, paved roads, transportation and leisure services, etc.), which culminate in exposure to vulnerabilities such as violence and trafficking and consumption of drugs. Such situations are the true picture of risk experiences for involvement with drugs, added to a range of factors that combine with the environment[12,14].

In analysis of family structures, studies have shown that single-parent households, in which only the mother or father is present, prevail among adolescent drug users, and that this family structure favors use[12-13]. Because it has the role of inserting its members into society and being the foundation for primary relationships, the family influences how a teenager reacts to the wide array of drugs available. Healthy family relationships from the outset of a child's birth serve as a protective factor throughout life, especially during adolescence[17].

Nonetheless, problems faced in adolescence that originated in childhood have a much more ample context of realization. It is known that family relationships, in conjunction with others, are one of the most important factors to be considered. Studies show that there is a linear relationship between alcohol abuse by parents and their children, and suggest that parents' behavior patterns and family interactions, in addition to the fact that they drink, are largely responsible for the attitudes of their children[17].

In adolescence, young people seek a "safety valve" to deal with anxiety arising from various sources of conflict and ambivalence. There are situations in which parents do not treat their kids like children, with the rights of a child, but also do not consider them adults, with adult rights. Thus, teenagers are often placed in an intermediate position in which their role is not fully defined, either in the family or in society[11-15].

The literature suggests that use of psychoactive substances is associated with absence from classes and school failure. It is noteworthy that the use of psychoactive substances, whether legal or illegal, impairs school performance and can lead to abandonment of studies[11-16].

Thus, commitment to studies, insertion into the labor market and family support are strategies that protect against drug use(16). In this study, analysis of the educational situation actually showed low density of problems for drug use. However, it is important to note that repetition of grades and dropout from school may be risk factors for drug use, especially if linked to low self-esteem.

A greater intensity of problems was observed in the area of leisure and recreation, which indicates the need for public policies focused on offering youth recreational spaces and activities, to promote comprehensive health care for adolescents.

The intensity of problems in the areas of behavior, social skills and interpersonal relationships demonstrates the seriousness of the situation faced by these young people, because they presented an existing direct relationship between economic need, access to social goods and services, and the use of drugs.

CONCLUSION

The study found an association between socio-demographic characteristics and the use of alcohol and other drugs by teenage students. This association represents a challenge to promote intersectoral actions in the fields of education and health, to adopt strategies aimed at both prevention and confrontation of use and abuse of alcohol and other drugs, especially in the adolescent population, with a view to promoting health by raising awareness of self-care. Thus, health education constitutes a means for building knowledge about the risks and harm caused by substances that lead to addiction.

Knowing the socio-demographic characteristics, as well as the factors that lead to use of alcohol and other drugs by teenagers, has relevance in the work of professional health care teams, as it helps in planning relevant interventions. The study, although limited by sample size, produced knowledge about a public health problem that is increasingly common in society. Further studies are needed to corroborate the comprehensive health of adolescents.

The results of this study showed that not all locations in the urban periphery in Brazil have actions for health promotion, despite being a national public policy. It is therefore recommended that the public sector effectively promote comprehensive health care of adolescents, especially activities to reduce morbidity and mortality as a result of abuse of alcohol and other drugs, prevention and control of smoking, prevention of violence and encouragement of a culture of peace, among other possible strategies to be implemented.

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