

## Assessment of alcohol consumption among adolescents and the associated problems\*

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**Objective:** investigating the consumption of alcohol by youths and also its problems and evaluating the relation between both of them. **Method:** descriptive study and transversal, sample 209 students from elementary school. It was applied an evaluation form about the sociodemographic profile, anthropometric, Drug Use Screening Inventory. **Results:** the consumption was in the same proportion among boys and girls and older than 13 years old. Adolescents who used alcohol were more likely to be involved in situations of risk, such as car accidents and difficulties to resist the use of other drugs. **Conclusion:** alcohol causes negative effects to adolescent life and the influence of friends and family can boost their consumption.

**Descriptors:** Adolescents; Alcohol Consumption by Minors; Nutritional Status; Students; Nursing.

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## Avaliação do consumo de álcool entre adolescentes e os problemas associados

**Objetivo:** investigar o consumo de álcool por adolescentes e os problemas associados ao mesmo. **Métodos:** estudo descritivo e transversal, realizado com 209 alunos do ensino fundamental II. **Coleta de dados:** aplicou-se um Formulário de avaliação do perfil sociodemográfico, dados antropométricos, Drug Use Screening Inventory. **Resultados:** o consumo de álcool foi na mesma proporção entre meninos e meninas com idade superior a 13 anos. Os adolescentes que utilizaram álcool apresentaram maior probabilidade de se envolverem em situações de risco, como acidentes automobilísticos e dificuldades para resistir ao uso de outras drogas. **Conclusão:** o álcool causa efeitos negativos à vida do adolescente e a influência de amigos e de familiares pode potencializar seu consumo.

**Descritores:** Adolescentes; Consumo de Álcool por Menores; Estado Nutricional; Estudantes; Enfermagem.

## Evaluación del consumo de alcohol entre los adolescentes y los problemas asociados

**Objetivo:** investigar el consumo de alcohol por adolescentes y problemas decurrentes del mismo y avaliar la relacion entre ambos. **Métodos:** estudio descriptivo y transversal, muestra de 209 alumnos de enseñanza fundamental II. **Colecta de datos** se aplicou un Formulário de avaliacion del perfil sociodemográfico, antropométricos, Drug Use Screening Inventory. **Resultados:** el consumo de alcohol estaba en la misma proporción entre los niños y niñas de más de 13 años de edad. Los adolescentes que usan el alcohol eran más propensos a participar en situaciones de riesgo, tales como los accidentes de tráfico y difícil de resistir el uso de otras drogas. **Conclusión:** el alcohol provoca efectos negativos en la vida de los adolescentes y la influencia de los amigos y la familia puede aumentar su consumo.

**Descriptorios:** Adolescentes; Consumo de Alcohol en Menores; Estado Nutricional; Estudiantes; Enfermería.

### Introduction

The consumption of alcohol and other drugs is a growing public health problem in Brazil and the world and occurs more and more at an early age, being the drug alcohol pointed in studies as the most consumed by adolescents<sup>(1-2)</sup>.

The phenomena related to the use of alcohol in adolescence are complex and involve psychic, emotional,

cognitive and social aspects<sup>(3)</sup>. This phase is marked by individual development in which biopsychosocial transformations are often experienced by young people in a confrontational way, making them vulnerable and at risk. Faced with the changes resulting from this age group, the adolescent initiates the use of alcoholic beverages for a collective acceptance, in search of personal identity and independence<sup>(3)</sup>.

The first contact with alcohol usually occurs at home, in order to imitate the behavior of relatives<sup>(4)</sup> or by having friends who consume the drug. Friends exert a great influence on a young person's behavior, influencing them to use that substance to join the group and create a certain popularity<sup>(1)</sup>.

Concerning family member's consumption, parents who drink have difficulty in discussing the issue when they are faced with the need to prevent early use of the substance by their children, since the use of alcohol by parents induces and facilitates behavior by adolescents<sup>(5)</sup>.

The use of this substance in adolescence negatively influences young people's behavior<sup>(2)</sup> and is directly related to multiple impairments that interfere in the development of the individual, increasing the probability of involvement in fights, car accidents, family conflicts, school dropouts, deficits in school performance, serious complications to health, sexual activity at risk, among others<sup>(6-7)</sup>.

In addition to the aforementioned consequences, caused by the use of alcohol, these have different effects on the human body; among them, its contribution both to obesity, to gaining anthropometric, weight and fat measures, as well as to protein-calorie malnutrition, depending on the intensity of consumption<sup>(8)</sup>.

Thus, this study is justified by the need to acquire updated data on alcohol consumption by adolescents, as well as to reinforce knowledge about the damages caused by this consumption in this age group, so that it contributes to the formulation of strategies of prevention of alcohol consumption that allows health professionals to be instrumental, especially nurses working in collective health, in order to better assist young people with this problem.

Thus, this study aimed to investigate alcohol consumption by adolescents and the problems associated with it.

## Methodology

This is a descriptive, cross-sectional, quantitative approach, carried out with seventh and eighth grade students of elementary school level II in a public school located in the south of the State of Minas Gerais.

All students (N: 250) were invited to participate in the study and the sample consisted of 209 (83.6%) volunteers. The eligibility criteria were: to be regularly enrolled in the seventh or eighth grade and to be present

in the classroom at the time of data collection, excluding those who, after three contact attempts, were not found.

Data collection was carried out between May and August of 2013 and two instruments were used: Form of evaluation of the sociodemographic profile and the anthropometric data of the participants and the DUSI (Drug Use Screening Inventory) to investigate the profile of alcohol consumption.

DUSI was originally developed in the United States (USA)<sup>(9)</sup> and later adapted and validated into the Portuguese language<sup>(10)</sup>. This is a questionnaire composed of an initial table that addresses the frequency of consumption in the last month of thirteen classes of psychoactive substances, followed by 159 questions divided into ten areas, which provide a profile of the intensity of problems in relation to substance use; behavior; health; psychiatric disorders; sociability; family system; school; job; relationship with friends and leisure and recreation.

The use of DUSI for the screening of specific types of drugs has been observed in different studies<sup>(1,11)</sup>, in order to evaluate, for example, only the use of these substances in the last month, only their level of consumption or, to investigate the relationship between drug use and school performance.

Thus, in this study, a clipping of the instrument was performed, in which responses were used referring to the frequency of alcohol consumption alone. To investigate the problems associated with substance use, the following domains were used: substance use, behavior, health, psychiatric disorders, family system, and school, relationship with friends and leisure and recreation.

For the data collection procedures, the research instruments were placed in envelopes and delivered to the students at the beginning of the didactic activities and collected at the end of the completed ones.

The anthropometric nutritional evaluation of the adolescents was previously scheduled in the school under study. To measure the weight, a portable digital scale Techine® Mod. BAL-180 BR, with graduation of 100g and capacity of 180 kg, was used and asked the individual to maintain orthostatic position, erect, arms extended along the body, feet together, positioned in the center of the scale.

To measure height, an Exton Height® wooden stadiometer was used, with a maximum height of 213 cm, whose classification scores by age and cut-off points were those recommended by the World Health

Organization (WHO) in 2007; in the same way, the diagnosis of growth, which was given by percentile and Z score<sup>(12)</sup>.

The Body Mass Index (BMI) was calculated by the weight given in kilograms (kg) and the height in meters (m), squared, resulting in a value expressed in Kg/m<sup>2</sup>, observing the criteria for assessing the nutritional status of the adolescents, established by WHO<sup>(12)</sup>.

A sample calculation was performed in which the margin of error was considered as 2.7% and 95% confidence. Statistical Package for the Social Sciences (SPSS), version 20.0 was used to analyze the data, in which descriptive statistics were used to summarize and present the data obtained. The nominal variables were described by the frequency analysis and the crossing of variables was performed using a contingency table. The chi-square test or the Fisher's exact test was used, using a 5% significance level, and odds ratios (OR) in consideration of confidence interval (CI) of 95%.

To ensure participants' rights and comply with ethical aspects, this study was approved by the Research Ethics Committee, through the Brazil Platform, under opinion number 238,188, in the year 2013.

It is noteworthy that parents / guardians and adolescents who agreed to participate in the study signed the Informed Consent Form and the Term of Assent respectively.

## Results

Of the 209 students who participated in this study, 50.7% were female and 49.3% male. The mean age was 13 years, ranging from 11 to 17 years. Considering the seventh years, the mean age was 12.7 years (n = 102), while in the eighth, 13.5 years (n= 107).

The low socioeconomic status was observed in this study, since 32% (n = 66) of the adolescents reported a family income less than a minimum wage, 62% (n = 130) from one to five minimum wages and only 6% (n = 13) had a family income above five wages. Additionally, the majority, 73.2% (n = 153) had family formation of more than four individuals.

The investigation of the profile of alcohol use showed that of the 209 adolescents, 21% (n = 44) used this substance in the last 30 days before the interview. Table 1 presents information on the use of alcohol by age group and by sex, in which the absence of statistical significance in the comparison between alcohol use and sex was observed, besides not having represented a risk factor, which is, male and female subjects used alcohol in the same proportion. On the other hand, age was statistically significant, since adolescents above 13 years of age consume more alcohol.

Table 1 - Frequency of alcohol consumption by age group and sex (n = 209). Alfenas, MG, Brazil, 2013

Variable	Use of alcohol				OR brute IC (95%)	P Value	
	No		Yes				
	n	%	n	%			
<b>Sex</b>	Female	84	79.2%	22	20.8%	1.037 (0.533; 2.017)	0.915*
	Male	81	78.6%	22	21.4%		
<b>Age</b>	≤13 years	128	85.9%	21	14.1%	3.789 (1.890; 7.596)	<0.001*
	>13 years	37	61.7%	23	38.3%		

Source: Research data. \*Chi-Square Test

Most adolescents (98.1%) are aware of the problems caused by alcohol use and have been advised (77%) about this. However, in identifying the risk of these young people being involved in different harmful events resulting from alcohol use, it was verified that those who consumed had a higher risk, as shown in the following tables.

According to Table 2, young people who consumed alcohol had a high risk of being involved in motor vehicle accidents and difficulties in resisting the use of other drugs. On the other hand, youngsters who did not use alcohol were less likely to exhibit poor behavior, engage in fights and risky activities, such as having risky sexual relations, and have fewer health problems such as psychiatric disorders.

Table 2 - Implications of adolescents' use or non-use of alcohol (n=209). Alfenas, MG, Brazil, 2013

Factors		Use of alcohol				OR brute IC (95%)	P Value
		No		Yes			
		n	%	n	%		
<b>Problems related to substance use</b>							
Effect of alcohol on memory	Yes	2	20	8	80	0.055 (0.011; 0.271)	<0.001*
	No	163	81.9	36	18.1		
Involvement in a car accident	Yes	0	0	3	100	5.024 (3.820; 6.608)	0.009*
	No	165	80.1	41	19.9		
<b>Behavioral changes</b>							
Involvement with fights	Yes	30	61.2	19	38.8	0.292 (0.143; 0.598)	0.001†
	No	135	84.4	25	15.6		
Aggressiveness	Yes	6	42.9	8	57.1	0.170 (0.055; 0.520)	0.002*
	No	159	81.5	36	18.5		
Risky attitudes	Yes	21	52.5	19	47.5	0.192 (0.090; 0.407)	<0.001†
	No	144	85.2	44	21.1		
<b>Problems related to health</b>							
Risky Sexual intercourse	Yes	2	28.6	5	71.4	0.096 (0.018; 0.512)	0.005*
	No	163	80.7	39	19.3		
<b>Problems related to psychiatric disorders</b>							
Problems of concentration	Yes	46	69.7	20	30.3	0.464 (0.234; 0.919)	0.026†
	No	119	83.2	24	16.8		
Feelings of sadness	Yes	55	70.5	23	29.5	0.457 (0.233; 0.896)	0.021†
	No	110	84	21	16		
Instability of mood	Yes	105	73.9	37	26.1	0.331 (0.139; 0.789)	0.010†
	No	60	89.6	7	10.4		

Source: Research Data. \*Fisher's Exact Test; †Chi-square test

Table 3 shows the implications of adolescents' use or non-use of alcohol in the family system, school performance, relationships with friends, and leisure and recreation activities. Parents or guardians at home most of the time, which are familiar with the daily life and places where their children attend and do not engage in family discussions, have provided a protective factor, reducing the risk of getting involved with alcoholic beverages. Still, teens who did not consume alcohol were less likely to have problems with school, friends, and leisure, such as going to places unfamiliar with their parents, having friends who consume or marketed alcohol and other drugs, and engaged in robberies or damage to public or private assets.

Concerning alcohol consumption by family members, 48.8% (n = 102) of the students stated that the residents of the household use alcoholic beverages; among them, the father, the mother, the brothers, the uncles and the grandparents.

Regarding the anthropometric nutritional status of adolescents, the mean weight was 49.7 kg and height, 1.58 meters, with a mean BMI of 19.7 kg / m<sup>2</sup>, with a minimum of 12.4 kg / m<sup>2</sup> and maximum of 35.5 kg / m<sup>2</sup>. Table 4 presents the classification of anthropometric nutritional status, variables related to weight, height and BMI, related to adolescents' use and non-use of alcohol.

It can be observed that there was no statistical significance (p > 0,332) for the correlation between alcohol use and non-use with the anthropometric nutritional status of the adolescents investigated.

Table 3 - Implications due to adolescents' use or non-use of alcohol (n = 209). Alfenas, MG, Brazil, 2013

Factors		Use of alcohol				OR brute IC (95%)	P Value
		No		Yes			
		n	%	n	%		
<b>Problems related to the family system</b>							
Discussions with family members	Yes	22	61.1	14	38.9	0.330 (0.152; 0.717)	0.004*
	No	143	82.7	30	17.3		
Do they go to places that parents do not know	Yes	22	61.1	14	38.9	0.330 (0.152; 0.717)	0.004*
	No	143	82.7	30	17.3		
Absent parents	Yes	27	65.9	14	34.1	0.419 (0.197; 0.894)	0.022*
	No	138	82.1	30	17.9		
<b>Problems related to school</b>							
Missing school	Yes	14	53.8	12	46.2	0.247 (0.105; 0.584)	0.001*
	No	151	82.5	32	17.5		
Irritability during classes	Yes	44	65.7	23	34.3	0.332 (0.167; 0.659)	0.001*
	No	121	85.2	21	14.8		
<b>Relationship with friends</b>							
Regular use of alcohol or drugs by friends	Yes	34	58.6	24	41.4	0.216 (0.107; 0.437)	<0.001*
	No	131	86.8	20	13.2		
Marketing of alcohol or drugs by friends	Yes	23	57.5	17	42.5	0.257 (0.122; 0.545)	<0.001*
	No	142	84	27	16		
Disapproval of friendships by parents	Yes	16	50	16	50	0.188 (0.084; 0.419)	<0.001*
	No	149	84.2	28	15.8		
Theft or damage to property by friends	Yes	10	55.6	8	44.4	0.290 (0.107; 0.788)	0.017†
	No	155	81.2	36	18.8		
Involvement with older peers	Yes	22	56.4	17	43.6	0.244 (0.115; 0.520)	<0.001*
	No	143	84.1	27	15.9		
<b>Leisure and recreation</b>							
Going out at night without parental consent	Yes	8	57.1	6	42.9	0.323 (0.106; 0.985)	0.049†
	No	157	80.5	38	19.5		
Attend parties without parental consent	Yes	37	63.8	21	36.2	0.317 (0.158; 0.635)	0.001*
	No	128	84.8	23	15.2		
Use of alcohol or drugs for fun	Yes	4	26.7	11	73.3	0.075 (0.022; 0.248)	<0.001†
	No	161	83	33	17		

Source: Research data. \*Chi-square test; †Fisher's Exact Test

Table 4 - Classification of anthropometric nutritional status, weight, height and BMI related to alcohol use and non-use (n = 209). Alfenas, MG, Brazil, 2013

Classification	Use of alcohol				Weight		
	No		Yes		Max*	Min†	SD‡
	n	%	n	%			
Malnourished	10	100	0	0	39.1	24.6	4.9
Eutrophic	118	79.2	31	20.8	68	29.5	7.6
Overweight	26	74.3	9	25.7	69.7	39.2	7.4
Obesity	11	73.3	4	26.7	94.9	49	13.7
Classification	Height			BMI			
	Max*	Min†	SD‡	Max*	Min†	SD‡	
	1.6	1.4	0.1	15	12	1.1	
Eutrophic	1.3	1.4	0.8	22	15	1.7	
Overweight	1.7	1.4	0.1	27	20	1.5	
Obesity	1.8	1.4	0.1	36	24	3	

Source: Research data. \*Max - Maximum; †Min - Minimal; ‡SD - Standard Deviation

## Discussion

Alcohol use among adolescents is a serious social, political and health problem<sup>(1)</sup>. Although there is in Brazil the law prohibiting the marketing of alcoholic beverages for children under 18 years of age<sup>(13)</sup>, adolescents are getting involved with this substance in an increasingly precocious manner.

In this study, 21% of the students interviewed (n = 44) consumed alcohol. This percentage was similar to that obtained by the National School Health Survey<sup>(14)</sup>, which found that 26.1% of young Brazilians consumed alcohol in the last month.

This data reveals that alcohol consumption by Brazilian adolescents is a reality that deserves attention because it is an age group in which individuals are in the process of intense transformations and doubts, which lead to biopsychosocial and cognitive changes, and such transformations associated with the early use of alcohol favor the occurrence of damages in these fields<sup>(3)</sup>. Além de ocasionar diversas alterações no adolescente, o uso do álcool é considerado porta de entrada para o consumo de drogas ilícitas<sup>(15)</sup>.

It can be observed that alcohol consumption was higher among students over the age of 13 and they are more likely to use alcohol, such findings corroborate the results of other studies<sup>(1,14-15)</sup>, where alcoholic beverages are more consumed by older students. This is due to the gain in autonomy and the need of young people to assert themselves, therefore, this favors participation in social events with alcoholic drinks easily accessible and often in the absence of parents or guardians.

On the other hand, as far as sex is concerned, in this study, girls and boys used this substance in the same proportion. Although controversies exist in this respect<sup>(16)</sup>, studies have shown a homogeneous consumption among female and male adolescents<sup>(13-14)</sup>. It is noted that the search for gender equality has led to changes in paradigms in various aspects, including alcohol consumption, which previously prevailed among men.

Regarding the students' knowledge about the damages and damages caused by alcohol use, the majority of adolescents (98.1%) reported knowing the consequences of using this substance, which was also observed in another study<sup>(4)</sup>, in adolescents recognize the risks that alcohol causes to health, but use it to provide well-being, to escape problems in their personal lives and to facilitate their insertion into the social environment.

Another worrying factor evidenced in the present study refers to a greater risk of the individuals who consume alcohol to be involved in automobile accidents,

because, as it is known, alcohol damages in a damaging way the individual's cognitive capacity, predisposing to the occurrence of accidents, prevailing greater risk in males<sup>(17)</sup>.

Regarding the behavior of the students investigated in this study, those who did not use alcohol had lower risk of developing inappropriate behaviors. This result is consistent with the other studies in which the authors show that fights between the young, school absentees, unprotected sexual activity and conflicting situations with family and friends are consequences of the consumption of alcoholic beverages<sup>(6-7)</sup>. Thus, it is inferred that alcohol negatively influences the behavior of these adolescents, encouraging them to experience situations of risk that have consequences in the short and long term<sup>(2)</sup>.

Another important finding of this study was the presence of parents or guardians at home most of the time and the fact that they knew the environments that the children attend, which conferred a protection factor, reducing the risks of adolescents alcoholic beverages, which confirms the fact that the dialogue with the parents is an important protection factor to avoid alcohol consumption<sup>(18)</sup>.

In this study, 48.8% of the students said that members of their family consume alcoholic beverages, which confers a risk for this adolescent to start using this substance, aggravating the problem. In addition, in a study conducted with Dutch relatives, it was shown that when both parents consume alcohol, children will have a higher chance of excessive use of this substance, when parents do not drink and communicate about alcohol consumption, adolescents' chances of consumption reduce, giving a preventive factor<sup>(5)</sup>.

Moreover, this study demonstrated that adolescents who did not drink alcohol were three times less likely to get family problems, corroborating with the study<sup>(11)</sup> that pointed to drug use as a triggering factor in family relationships among adolescents. Therefore, the consumption of alcoholic beverages in adolescence may be associated with the fact that they have family members who consume such substance and because they experience situations in families, such as not having a friendly relationship with the parents, a feeling of abandonment and disobedience on the part of the teenagers<sup>(11)</sup>.

In this study, adolescents who did not consume alcohol had lower chances of getting problems related to friendships, as another study<sup>(1)</sup> shows that having friends who drink alcohol, have problems with the law, steal or damaged something, sell drugs, drugs at parties and get bored when they do not drink at parties are at increased risk of using alcohol and / or other drugs. This demonstrates the influence of friends on adolescent

behavior, where behaviors are often imitated, which favors such inappropriate attitudes encouraged by the group in the quest for popularity.

It was found in this study, through correlations between the data, that there was no statistically significant association between alcohol consumption and the anthropometric nutritional status of adolescents. However, one should not ignore a possible relationship between these variables, since other researchers<sup>(6)</sup> point out the interference of alcohol in the nutritional status of its consumers, with the influence of alcoholic beverages on abdominal obesity, mainly in the male sex.

Although the limitations of the study are related to the cross-sectional research model, restricted to a convenience sample, the findings of this study contribute to the areas that require attention from health professionals, the family, the school and the community for the establishment of strategies for the prevention of alcohol consumption by adolescents or for the reduction of alcohol-related harm. Still, it is worth emphasizing the importance of multi-centric investigations that involve several students, including of other series of Elementary and Middle School in order to extend the reach of the results.

The researches that point out the profile of alcohol consumption among adolescents, as presented here, may not portray the true Brazilian reality, due to the possible difficulty of students joining in the manual filling of research instruments, which do not arouse their interest during the process screening; with this, the need for the elaboration of interactive and innovative tools is noted, in order to arouse greater commitment and motivation in the youngsters during data collection in order to obtain more reliable results.

## Conclusion

The study allowed enabled the conclusion that alcohol consumption by the public school adolescents was considerable, with reports of increased use for the age of 13 years or more and homogeneously between the sexes.

Investigated adolescents who used alcohol were more likely to be involved in situations of risk, such as car accidents and difficulties to resist the use of other drugs.

Alcohol can cause a number of negative and harmful effects on the adolescent's life, and in addition, the influence of friends and relatives to boost this consumption. As observed in this study, having parents or guardians present at home, who know the daily and places where the children attend and have friends

who have good behavior, conferred a lower chances of consuming alcoholic beverages.

Therefore, it is relevant that health professionals, especially the nurse, formulate strategies to keep young people away from risk factors that increase the probability of involvement with alcohol, and potentiate the protective factors that contribute to the reduction of the chances of use.

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