

Research Article

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Pattern of alcohol consumption by young people from North Eastern Portugal

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Abstract: Alcohol is the most used psychoactive substance among adolescents, is an important public health problem and a major risk factor for the health of this group. This study is regarding to the pattern of alcohol consumption by adolescents. Descriptive, correlational and cross-sectional study, with a sample of 378 adolescents, which are attending three high schools, in north-eastern Portugal. In the data collection we used a questionnaire. Data was analysed using SPSS. The prevalence of alcohol is 86.8%. The mean score of Alcohol Use Disorders Identification Test (AUDIT) was 3.53 ± 4.525 points. The vast majority of participants were located in the non-excessive alcohol consumption area (91.3%). The pattern of alcohol consumption differs significantly between gender (Wald: $p \leq 0,004$) and the religious practice (Wald: $p \leq 0,027$), with greater percentage of boys and students who did not practice any religion in excessive consumers. The prevalence of alcohol consumers is high. The proportion of young people with excessive consumption in our sample is lower than in other studies, but shows that there is a group of adolescents in excessive consumption. It found a relationship between consumption pattern, gender and religious practice. These results justify the development of public health interventions.

Keywords: Adolescents; Alcohol drinking; Public health; AUDIT test

1 Introduction

According to the United Nations Children's Fund, adolescence is a stage of life cycle between 10 and 19 years old, with an initial phase of 10 to 14 years and a final phase of 15 to 19 years old, being characterized by physiological changes resulting from aging, as well as psychological and sociological changes. Physiological changes involve the transformation of children's physical and sexual aspects, while psychological changes involve development of tasks, focusing on the search of personal and psychological identity, with regard to their status within the society [1].

This transition of the childhood to adulthood is a path that goes from dependence of young teen and having little responsibility to a more responsible autonomy phase. It's not a linear path of cognitive, psychosocial and psychosexual development, which leads him to wonder about the changes of his body and behaviour. Sometimes becoming quite self-centered, believing that they are immune to risky behaviours and feeling quite invulnerable [2].

Seeking new experiences, added to self-centeredness of adolescence and the feeling of greater invulnerability, often lead adolescents to adopt risky behaviours, such as alcohol consumption [3].

It is also known that among the psychoactive substances alcohol is the most used by adolescents and the most commonly involved in cases of abuse, representing a major public health problem, due to its repercussions. This issue is important because it is a crucial stage of development, given its biological, psychological and social vulnerability, with implications to the current and future health of the individual [4-7].

The alcohol usage is associated with more deaths than all other psychoactive substance, and it is also the main cause of road accidents, leading the causes of death among young people aged 16 to 20 years old. Furthermore, it increases the probability of practising unprotected sex, sexual violence, increasing the vulnerability to Sexual Transmitted Infections and unwanted pregnancies. It is also associated with academic failure, decreased self-es-

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teem, memory deficit and the use of other psychoactive substances and other high-risk lifestyles [6, 8].

The importance of this theme is expressed in the references that are made by the World Health Organization (WHO). The document of this organization, Health 21: Health for All Policy Framework for the WHO European Region outlines goals that puts emphasis on tackling this problem, including goal 4 and 12. Goal 4 states that the proportion of young people involved in harmful forms including alcohol, should be substantially reduced, while the target 12 refers to the minimization of harmful effects of alcohol, tobacco and drugs whose side effects should be significantly reduced by 2015 [9].

In turn, the European Charter on Alcohol, from WHO states that every individual has the right to receive impartial information and education, starting as early as possible regarding to the consumption of alcohol on the health consequences, family and society. It refers specifically to children and teenagers, implying that they have the right to grow up in a protected environment away from negative consequences of alcohol consumption and protecting non-consumers from pressure to drink, aggressive advertising and support in their decision [10].

The Portuguese National Health Plan 2012-2016, refers to this problem, showing that the increase in alcohol consumption in the age group of 15 to 24 years old, with the National Program for Reducing Alcohol Problems Linked as reference in this fight, considering it an area recommended for intervention [10].

Some authors, based on the WHO report on alcohol in the EU, say that European Continent continues to lead the list in the alcohol consumption in the world, with an annual mean consumption of 12.4 litres per capita, adding that Europe is the world's region with the highest per capita consumption of alcohol [11].

Among countries within the European Union, Portugal is the one that has the highest alcohol consumption and Linked Alcohol Problems prevalence. The consumption per capita was the highest in the world, standing in 2000 at 10.8 litres of pure alcohol, being the 3rd largest consumer [12].

An author had already referred to these behaviours, stating that over 60% of young people aged between 12 and 16 years old and more than 70% over 16, consume alcohol regularly. He further adds that patterns of high-risk alcohol consumption have increased, as well as the drunkenness and Binge Drinking, especially, amongst adolescents and young adults [13].

Binge Drinking is characterized by the consumption of large amounts of alcohol, within a very short period of time. This type of consumption happens when 5-6 drinks

are exceeded in men and 4-5 drinks in women, within the same occasion and in a limited time space [14].

The same authors, based on the WHO, define the risk/excessive consumption as a pattern of substance usage that increases the risk of harmful consequences for the consumer and/or to the society, being it physical or psychological, if the pattern is persisted [14-15].

The prevalence of alcohol use in the last year of Portugal was 74%, lower than the average of the 36 countries participating in the study Substance Use Among Students (ESPAD). In this study it can be seen that the consumption of alcohol was quite different among the participating countries. The highest rates were recorded in the Czech Republic, Denmark, Germany, Greece and Monaco (about 90%) and the lowest were observed in Iceland and Albania (below 50%); Portugal occupies an intermediate position [16].

A study on the consumption of Alcohol, Tobacco and Drugs, held in Portugal, revealed that from 2007 to 2011 there was an increase in intensive consumption (intoxication), with more students drinking heavily, more frequently and in larger amounts with higher alcohol content (known as spirit drinks) [17].

According to the Intervention Service in Additives and Behaviour in Dependencies of Portugal, the annual per capita alcohol consumption in the population with 15 years old and over (2010) was 12.9 litres of pure alcohol, being 18.7 litres in men and 7.6 litres in females. Within the group of 13 to 18 years of age there were consumers in the last 12 months, 26.9% of young people aged 13 and 86.3% of young people aged 18 years old. Over the past 12 months there were 5.6% of young people intoxicated aged 13 and 43.9% aged 18 years old [18].

The study of behaviour related to health and factors influencing them is essential to the development of health education policies, health promotion programs and interventions focused at this age group. Many of the behaviours of adolescents can influence, direct or indirectly, their health in the short and long term [19].

It is within this problem that the object of our concern emerged for this study, in which we designed the following objectives: i) evaluate the prevalence of alcohol consumption and excessive drinkers (AUDIT); ii) analyse the relationship between excessive alcohol consumption and certain socio-demographic variables.

There are already some studies carried out in Portugal, with the same goals, but they are few, especially in this geographical area, home of the young participants in this study. Studies that use the AUDIT scale are even scarcer. Consequently we consider this study very relevant to know the reality.

2 Methods

It is a cross-sectional, descriptive and correlational study with a quantitative approach [20]. The population was composed of students attending three public high schools (designated A, B and C), in Chaves municipality (north-east of Portugal), in the academic year of 2013, with the objective of identifying the pattern of excessive alcohol consumption, totalling 979 individuals.

The inclusion criteria that defined the population were: i) Teens attending the regular secondary education in the academic year of 2012/13; ii) Teens of both genders, aged over 15 years old.

For exclusion criteria that defined the sample we took into account: i) Adolescents who have not completed all the data collection instruments; ii) Teens who had not delivered the informed consent signed by their parents/carers or by them if already adults.

The sample of accidental kind, not random, was made up of 119 students from School A (46.5% of the total number of school students), 127 students from School B (38.0% of the total number of school students) and 132 students from the School C (33.9% of the total number of school students), a total of 378 students, about 38.61% of the population.

As data collection instrument, we used a self-reporting questionnaire developed and validated specifically for this purpose, with a part of socio-demographic characterization and the Alcohol Use Disorders Identification Test (AUDIT).

The AUDIT identifies the excessive consumption of alcohol and its consequences. It was originally developed by the WHO, in the 80's and has been validated for the Portuguese population [21]. This tool have been applied in Portuguese populations over 15 years old already [22].

It consists of 10 questions of closed answer on consumption, dependence symptoms and problems resulting from consumption. Questions 1-8 are scored 0-4 points; questions 9 and 10 are scored with 0, 2 or 4 points. The total score ranges between 0 and 40 points, and when more than 8 points is considered to be excessive alcohol consumption.

Ethical approval: Informed consent has been obtained from all individuals included in this study. The research related to human use has been complied with all the relevant national regulations, institutional policies and in accordance to The Helsinki Declaration and has been approved by the General Directorate of Education (Portugal), with reference to paragraph 0351800001 of 2012.11.26. Then we requested a formal authorization from

the Director of each school, which was part of the study to the questionnaire that confirmed the assent.

The data collection period was from April to May 2013. After obtaining authorization, in order to apply the questionnaires we had a meeting with the head teachers and teachers of the participating classes in the study, to whom we gave the objectives of the study and was provided information in order to standardize data collection procedure and emphasize the importance of anonymity. After the reception of formal consent, teachers distributed the questionnaires in their respective classrooms, which were later deposited in a box by the students after their completion. On the date set with the teachers, researchers attended the schools involved in the study for the collection of the questionnaires. In some schools there was the need of a second visit to retrieve larger number of questionnaires.

Data processing was performed using SPSS (19.0), which is built in a database. We proceeded with the descriptive analysis calculating the absolute and relative frequencies, measures of central tendency and dispersion analysis and to evaluate the significance of the gender, age groups, academic failures and religious practice about the likelihood of having excessive alcohol consumption (AUDIT categories) we resort to the logistic regression and Mann-Whitney (MW) test. We considered the significance level 5% [23].

3 Results

In terms of socio-demographic characterization of the total sample ($n = 378$), most of the students were females (60.8%), belonged to the age group of 17-18 years old (53.2%), had no failures in school (75.4%) and practiced a religion (61.4%) (Table 1). The mean age was 16.96 ± 1.269 years old, ranging between 15 and 21 years old.

Of the total sample 86.8% of the students considered themselves alcohol consumers, the proportion of boys (87.2%) was slightly higher than girls (86.5%). The highest proportion of consumers belonged to the age group of ≥ 19 years old (97.3%) followed by a gradual rise in proportion as the age increases.

The sample has an AUDIT score mean of 3.53 ± 4.525 points, the mode was 1 point, ranging from a minimum of 0 points and a maximum of 40 points. This mean can be considered low, indicating that most students did not fall in the category of excessive alcohol consumption and having low scores on the scale.

The males had the highest median in the AUDIT score, although the maximum score is lower than females. Regarding to the age group, the highest median was in the group of 17-18 years old. With regard to failures, both students who did not fail and those who had already failed hold the same median. Concerning religious practice, the group that practiced no religion obtained the highest median. All the groups that obtained higher median also had a greater interquartile range (Table 2).

We established two categories of drinkers based on the AUDIT score: Non excessive consumption and with

Table 1: Socio-demographic characterization of the sample (%) N = 378

Variables	n	%
Gender Female	230	60,8
Male	148	39,2
Age group		
15-16 years	140	37,0
17-18 years	201	53,2
≥ 19 years	37	9,8
School attended by students		
A	132	34,9
B	119	31,5
C	127	33,6
Occurrence of Academic failures		
No	285	75,4
Yes	84	22,2
Did not answer	9	2,4
Religious practice		
No	140	37,0
Yes	232	61,4
Did not answer	6	1,6

Legend: n= Absolute frequency; % – Relative frequency.

Table 2: Measures of central tendency and dispersion of the scores AUDIT N = 378

Variables	Minimum	Maximum	Mode	Median	IR
Gender Female	0	40	1	2,00	3
Male	0	24	1	3,00	6
Age group					
15-16 years	0	18	1	2,00	2
17-18 years	0	40	1	3,00	5
≥ 19 years	0	13	1	2,00	4
Failures					
No	0	40	1	2,00	3
Yes	0	24	1	2,00	5
Religious practice					
No	0	40	2	2,50	5
Yes	0	27	2	2,00	3

Legend: IR – Interquartile of Ranges.

excessive consumption. In the total of the sample, we found that 8.7% of the students were in the category with excessive consumption of alcohol. When we analysed the data by gender, the proportion of male students in the same category (14.9%) is more than three times than the females, meaning a larger number of boys in this category. In terms of age groups there isn't a linear evolution. The highest proportion of excessive consumers was in the age group of 17-18 years old and the smallest one in the group of ≥ 19 years, confirming that the age group of 17-18 years old is where there were more students with excessive alcohol consumption. The proportion of excessive consumers is higher in students who have never failed and in students who do not practice any religion, but the mean rank of MW test is higher in students who have failed (Table 3).

By analysing the Table 4 results, the logistic regression revealed that the age group (c^2 Wald= 0,000; $p \leq 0,992$) and having failures (χ^2 Wald= 2,291; $p \leq 0,130$) did not present a statistically significant effect on the logit of the probability of having excessive consumption. In turn, the gender variable (χ^2 Wald (1) = 8,450; $p \leq 0,004$; OR: 3,111) had a statistically significant effect on the logit of the probability of having excessive consumption as well religious practice (χ^2 Wald (1) = 4,872; $p \leq 0,027$; OR: 2,374). Males are 3,111 times more likely to have excessive consumption than females, and those who do not practice any religion are 2,374 times more likely to have excessive alcohol consumption than who practice any religion (Table 4).

Table 3: Sample distribution regarding AUDIT categories of factors, median and interquartile of ranges and mean rank of MW test (%) N = 378

AUDIT categories	No excessive consumption	With excessive consumption	Mean Rank of MW test	Median	IR
Gender					
Female	95.2	4.8	182.04	2.00	3
Male	85.1	14.9	201.09	3.00	6
Age group					
15-16Y	93.6	6.4	185.06	2.00	2
17-18Y	88.5	11.5	194.74	3.00	5
≥ 19Y	97.3	2.7	178.11	2.00	4
Academic failures					
No	78.3	66.7	182.74	2.00	3
Yes	21.7	33.3	192.66	2.00	5
Religious practice					
No	35.6	59.4	195.74	2.50	5
Yes	64.4	40.6	180.92	2.00	3
Total	91.3	8.7			

Legend: IR – Interquartile of Ranges; MW – Mann-Whitney; Y – Years

Table 4: Results of logistic regression between AUDIT categories and attribute variables

Variables	CE	SE	Wald	df	p
Gender (1)	1,135	0,398	8,123	1	0,004
Age group	-0,003	0,326	0,000	1	0,992
Failures (1)	-0,657	0,434	2,291	1	0,130
Religious practice (1)	0,865	0,392	4,872	1	0,027

Legend: CE – Coefficient estimates; SE – Standard error; Wald – Wald statistics; df – Degree of freedom; p – Probability.

4 Discussion

The socio-demographic characteristics of our sample are very similar to other studies in Portugal. This is the case of other study, with a sample of 360 high school students from a public school in the city of Famalicão (Coast) and a public school in Bragança (Interior of the country), aged between 14 and 21, where the proportion of female students was 59.7% and the mean age of 16.1 years old. Females were also majority with a very similar percentage to the present study and the mean age a bit lower, which is explained by the fact that study had involved students from lower education and therefore younger [24].

The prevalence of alcohol consumers in our sample (86.8%) is higher than the prevalence found in this study, which was 77.7% for students from the coast and 66% for students from the interior of the country. However, it was slightly lower than the one obtained in a study with a sample of 917 students from public high school in the city

of Viseu (center interior of Portugal), which was 90.6% and in a study named PINGA with a sample of 1061 students from a public school of Bragança district (North of Portugal), which was 89.9%. These differences may be due to the inclusion of younger students usually with less alcohol consumption and because it's in different geographical areas, such as Viseu and Bragança Region, regions of high consumption [14, 24-25].

The mean AUDIT score in this study (3.53 ± 4.525 points) is lower than the one obtained in a study involving a sample of 501 students from public and private high schools, from Vila Real municipality, in the academic year of 2012/13, which it was 4.79 ± 4.97 points. This means that our sample includes smaller proportion of students with excessive alcohol consumption [26].

Also in this study, the highest proportion of students was included in the category “Non excessive consumption”. However in this study, the percentage of students “With excessive consumption” is much higher than in our

study (20.3%), which indicates that in this study the situation is substantially more severe than in our sample. The justification for this difference may be related to the fact that the study involved professional students in which alcohol consumption seems to be more rooted, since they found statistically significant differences between the two types of education (Regular and professional teaching), with higher consumption in the professional one [26].

After analysing the prevalence of alcohol consumption and excessive consumers in the sample, this study shows us that although the prevalence of consumption is high (86.8%), it is not as high as the one seen in other studies carried out in other regions of Portugal. The same can be said of the proportion of excessive consumers (8.7%). It is much lower when compared to a study in the same district (Vila Real).

We found that there is a relationship between the excessive consumption (AUDIT categories) and gender, as well as religious practice, factors that are associated with this behaviour in the study.

The study carried out in Vila Real city only identified a dependent relationship between the categories of AUDIT and gender, with males to fit more on excessive consumption, like our study. Besides this study, apart from the gender, also the variable practice of religion was shown discriminative. These results can be explained by the psychological characteristics, as the desire adventure and exposure to risk of boys and the absence of standards and control in young people who do not practice any religion. In this study there is still a difference between genders regarding alcohol consumption, with higher consumption of boys.

The main limitations of this study are related to the fact that the sample is non-random and the representativeness of the sample in each school is not similar, which may have implications for the generalization of the results for this population. Thus, the results may be overestimated in school A and underestimated in school B and C. This difference in the representativeness of the sample of each school may be correlated with the number of students who were absent on the day of data collection and the fact that more students at school A delivered the signed informed consent.

These results may contribute to the improvement of health care provided under the School Health in the context of the Community Care Unit, which covers the geographical area where was located the school. Health professionals can adapt better their interventions and select the most effective strategies. There is a group of adolescents that has problems of excessive alcohol con-

sumption that needs help. The health System should give an effective answer.

This study may help health professionals who develop their professional activity within the health facilities, of Primary Health Care, whose area of influence includes the three participating schools to better understand the reality regarding to the consumption of alcohol in the contexts involved and to suit their interventions, improving the quality of health care and helping these young people to grow healthily.

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