Alcohol consumption and personality: 
A study among Portuguese secondary school students

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Objectives: To analyse the drinking patterns of secondary school students and the relationship between drinking patterns, age at drinking onset, gender, personality traits and family drinking habits.

Methods: A descriptive, correlational study was performed with a randomly selected sample of 103 students in 10th, 11th and 12th grades, aged 15–20, in the Centre Region of Portugal. The Drinking Habits Questionnaire and the Portuguese version of the Eysenck Personality Inventory were used to collect data. Data collection was carried out by self-administered questionnaire in the first week of March 2008.

Results: On average, boys started drinking alcohol earlier (13.1 years) than did girls (14.1 years), but the current drinking pattern was identical across genders. Of 103 students, 85.4% were drinkers and 14.6% had never had alcohol. Of those who had already started to drink (n = 88), 79.5% were occasional or light drinkers, particularly on weekends and with beer as the primary alcohol of choice. Additionally, 82.0% of current drinkers also drank spirits on weekends, 52.3% had been intoxicicated at least once, and the mean age of first intoxication was around 16 years. Adolescent drinking pattern was positively associated with family drinking pattern (rs = 0.31; p <0.001) and with extroversion (rs = 0.24; p = 0.013).

Conclusion: Both boys and girls attending secondary school in the Centre Region of Portugal tend to drink moderately and occasionally, especially on weekends. About half of the students have been intoxicated at least once. Drinking pattern is weakly correlated with family consumption pattern and with extroversion.

Key Words: Adolescence, Alcohol, Personality

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INTRODUCTION

Alcohol consumption is a widespread and expanding practice in contemporary society\(^1\), and the associated social norms play an important role in defining a reference model for drinking within youth culture. Excessive alcohol consumption is an increasing problem which has assumed major dimensions in many countries; drunkenness has acquired a major cultural and social importance, especially among young people. The prevalence of underage drinking is already so high that the World Health Organization (WHO) has deemed it a primary public health problem\(^2\).

In many European countries, the drinking patterns among school children have escalated, with increases in both binge drinking--defined by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) as the consumption of five or more drinks for men, or four or more drinks for women, in about 2 hours--and drunkenness (having ever experienced more than 20 drunken episodes)\(^3\)\(^-\)\(^5\). Binge drinking by youth is associated with violence and anti-social behaviour; it contributes to unprotected sex, drug consumption and educational problems including truancy. On the other hand, continued heavy alcohol consumption is linked to various pathologies including liver, oncological and cardiovascular diseases\(^3\).

Underage drinking must not be addressed as an isolated phenomenon, as it is fully embedded in the context of child and adolescent environmental, biological, psychological, and social development\(^6\) and is an important predictor of subsequent alcohol abuse\(^7\). In particular, family is considered to be a critical entity in the development process, assuming a very important role in every stage of life. It can be easily inferred that children from families with alcoholic members will start using alcohol much earlier and more frequently, and may be more likely to present excessive drinking patterns than would those from families without such influences\(^7\)\(^-\)\(^10\). Clearly, families can have an important role in the transmission of misconceptions about alcohol use.

Beyond social and environmental influences, personality traits are associated with alcoholism and may lead to a generalized risk of substance abuse\(^11\)\(^-\)\(^12\). For example, the most vulnerable individuals to excessive drinking may be those with high impulsivity/novelty-seeking tendencies and those with high neuroticism/negative affectivity. Since these personality traits are constantly present in studies with excessive drinkers, some researchers have posited that there are two different paths leading to alcohol-related problems based on these traits: one of impulsivity and novelty-seeking, and the other of neuroticism or negative affectivity\(^13\). Taking into account that the concept of a typical pre-alcoholic personality is presently rejected by most authors, it is acknowledged that certain personality characteristics may fuel the search for the psychopharmacological effect of alcohol in some individuals\(^10\).

Adolescence represents a formative period in terms of both access and susceptibility to alcohol. Adolescents may be exposed to increased opportunities for facilitated access to psychoactive substances and subsequent adoption of correlated risk behaviours, as well as a constant influence and pressure from peer groups as from social and family spheres.
Nevertheless, this stage of development may be seen as an optimal target period to develop interventions in the areas of prevention of early onset drinking and promotion of healthy lifestyles. It may be said that the problem is not the crisis, but the way out of the crisis.\textsuperscript{10}

Considering this issue, this study was conducted to characterize the drinking patterns and personality traits of secondary school students in a Portuguese village, as well as to analyse the relationship between the drinking patterns of these students and their sociodemographic characteristics, personality traits and family drinking habits.

**METHODS**

A cross-sectional study was conducted on a sample composed of 103 adolescents attending the 10\textsuperscript{th} (n = 25), 11\textsuperscript{th} (n = 33) and 12\textsuperscript{th} (n = 45) grades in the secondary school of a village with around 18,000 inhabitants in the Centre Region of Portugal (one of 78 counties in the region), during the academic year 2007/2008. This setting was chosen because it is located within an area of transition between regions experiencing different development dynamics—one more urban, close to the region’s main city, and the other more remote and characteristically rural—and it receives students from both areas. These characteristics contribute to the sample’s representativeness.

**Study design**

A quantitative, descriptive correlational study was conducted based on the following research question: What is the drinking pattern of secondary school students from a village in the Centre Region of Portugal? The hypothesis was that the drinking patterns of these students would vary according to gender and in relation to age at first drink, relatives’ heavy drinking and personality traits.

**Variables**

In addition to basic sociodemographic variables (gender, age, school year), drinking habits were assessed using the following dimensions based on the Drinking Habits Questionnaire (DHB)\textsuperscript{15}: frequency and usual quantity of alcohol consumption over the previous six months; whether there had been intoxication episodes (at least once); age of first drink and age of first intoxication; place and events where alcohol is usually ingested; people with whom respondent usually drinks; who offered the first drink; reasons for having the first drink; what kinds of alcoholic drinks are chosen; and frequency and quantity of family alcohol consumption. Adolescents’ alcohol drinking pattern was classified according to the following criteria: a) occasional drinker: consumes one or two drinks at parties or on special occasions—drinks alcohol more than once a year, but no more than once a month; b) light drinker: does not drink every day—consumes between one and thirty drinks per month, that is, less than 84 g of alcohol per week; c) moderate drinker: daily consumption of no more than three drinks or, even though not daily, consumption between 84 and 252 g of alcohol per week; d) excessive drinker: daily consumption of more than three drinks or weekly consumption above 252 g of alcohol\textsuperscript{15}. Personality traits were defined by the neuroticism/emotional stability dimension, often called neuroticism, and the extroversion/introversion, exclusively called extroversion\textsuperscript{16}.

**Instruments**

The data collection instrument used to measure the variables of interest was com-
posed of three parts: questions about age, gender and school year; the *Drinking Habits Questionnaire* (DHB) used by Duarte\(^{15}\), consisting of both open and closed questions, to assess the previously mentioned variables related to drinking habits; and the Portuguese version\(^{17}\) of the *Eysenck Personality Inventory* (EPI).\(^{18}\)

Each EPI item was scored on a Yes (1)/No (0) format, with the exception of reverse-scored items, (Yes = 0, No = 1). A cut-off point for EPI scoring was determined for use in this study, which made it possible to classify students according to their positions on the neuroticism and extroversion scales. The arithmetic mean for each dimension was calculated, and the following scores were obtained: \(\bar{x} 11.5\); SD 4.6 and \(\bar{x} 11.9\); SD 2.9, respectively. Thus, with means for both dimensions close to 12, it was established that individuals who scored between 1 and 11 would be classified as having low neuroticism/low extroversion, whereas individuals who scored equal to or above 12 would be classified as having high neuroticism/high extroversion. To verify the reliability of the EPI, internal consistency was assessed by Cronbach’s alpha coefficient and the values obtained were 0.8 and 0.7 in the dimensions of neuroticism and extroversion, respectively.

**Data collection**

The instrument was self-administered by participants from March 3 to March 7, 2008. Participants were selected using non-proportional stratified random sampling, in which the study population was divided into strata according to school year. By this method, 50% of the students were selected from each stratum, in a total of three 10\(^{th}\)-grade classes and two 11\(^{th}\)-grade classes and three 12\(^{th}\)-grade classes. Inclusion of participants was based on presence in the classroom on the date of questionnaire administration and voluntary provision of informed consent.

**Ethical issues**

Before starting data collection (February 2008), formal approval of the study protocol was obtained from the School Council of the participating school, in accordance with the Parents/Carers Association.

**RESULTS**

**Alcohol drinking pattern**

As presented in Table 1, 85.4% (n = 88) of the respondents were alcohol drinkers and 14.6% (n = 15) had never consumed alcohol. Those who drank were mainly occasional (25.0%) or light drinkers (54.5%), especially on weekends. Meanwhile, 15.9% of participants were moderate drinkers and 4.5% were excessive drinkers. The mean age of first intoxication was approximately 16 years, and 52.3% of the students had been intoxicated at least once.

Over the previous six months, average quantity of alcoholic drinks consumed in a week was low and increased on weekends. In fact, on weekends, out of the 88 adolescents who consumed alcohol, 72 (81.8%) drank spirits, 46 (52.3%) beer, and 12 (13.6%) wine. Beer was the most commonly consumed alcoholic drink, at an average of 4.4 drinks, although a high degree of dispersion was observed (CV = 128).

Most adolescents (45.1%) reported that their first alcoholic drink was in a pub. Additionally, 44.1% experimented on their own, 38.2% were offered their first drink by par-
ents or family members and 17.7% started drinking because of peer pressure. Regarding family alcohol consumption, 86.4% of participants reported that there was no excessive alcohol consumption within the family.

**Gender, age at first drink, and current drinking pattern**

On average, boys started drinking alcohol earlier (13.9 years; mean rank = 43.9) than girls (14.1 years; mean rank = 55.8) (z = -1.997; p = 0.046). However, no gender differences were found in current drinking pattern (z = 1.094; p = 0.274).

**Adolescents’ drinking pattern, age at first drink, relatives’ drinking pattern, and adolescents’ personality traits**

There was no evidence of an association between age of first drink and current drinking pattern (rs = 0.09; p = 0.374). However, data indicated a weak positive correlation between adolescents’ and their relatives’ drinking pattern (rs = 0.31; p = 0.002) suggesting a trend towards a heavier drinking pattern among those students whose relatives had higher alcohol consumption levels.

Regarding the relationship between drinking pattern and personality traits, there was no evidence of an association between adolescents’ drinking pattern and neuroticism (rs =

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Distribution of adolescents according to the frequency of consumption, usual quantity of consumption, current drinking pattern, and experience of intoxication</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Frequency of consumption</strong></td>
<td>n</td>
</tr>
<tr>
<td>1 to 2 times a year</td>
<td>15</td>
</tr>
<tr>
<td>1 to 2 times a month</td>
<td>20</td>
</tr>
<tr>
<td>1 to 2 times a week</td>
<td>11</td>
</tr>
<tr>
<td>3 to 4 times a week</td>
<td>3</td>
</tr>
<tr>
<td>Only on weekends</td>
<td>30</td>
</tr>
<tr>
<td>Only on holidays</td>
<td>8</td>
</tr>
<tr>
<td>Everyday</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>88</td>
</tr>
<tr>
<td><strong>Usual quantity of consumption</strong></td>
<td>n</td>
</tr>
<tr>
<td>1 drink</td>
<td>29</td>
</tr>
<tr>
<td>2 to 3 drinks</td>
<td>37</td>
</tr>
<tr>
<td>4 to 6 drinks</td>
<td>9</td>
</tr>
<tr>
<td>6 or more drinks</td>
<td>13</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>88</td>
</tr>
<tr>
<td><strong>Consumption pattern</strong></td>
<td>n</td>
</tr>
<tr>
<td>Occasional drinker</td>
<td>22</td>
</tr>
<tr>
<td>Light drinker</td>
<td>48</td>
</tr>
<tr>
<td>Moderate drinker</td>
<td>14</td>
</tr>
<tr>
<td>Excessive drinker</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>88</td>
</tr>
<tr>
<td><strong>Intoxications</strong></td>
<td>n</td>
</tr>
<tr>
<td>Intoxication at least once</td>
<td>46</td>
</tr>
<tr>
<td>Age of 1st intoxication: ( \bar{x} = 16.0 ) years</td>
<td></td>
</tr>
</tbody>
</table>
0.16; p = 0.109). However, the data revealed a weak positive correlation of drinking pattern with extroversion (rs = 0.24; p = 0.013), indicating a trend towards a heavier drinking pattern among more extroverted individuals.

Considering the extroversion trait in isolation, differences in drinking pattern were also explored according to classifications of low or high extroversion; results indicated a heavier drinking pattern in extroverted students than in introverted students (z = -2.513; p = 0.012). Further analysis showed that, of 61 students classified as having high extroversion, 7 were non–drinkers (11.5%), 11 were occasional drinkers (18.0%), 27 were light drinkers (44.3%), 12 were moderate drinkers (19.7%) and 4 were excessive drinkers (6.6%). Additionally, of 42 students classified as having low extroversion, 8 were non–drinkers (19.0%), 11 were occasional drinkers (26.2%), 21 were light drinkers (50.0%), 2 were moderate drinkers (4.8%), and none were excessive drinkers.

**DISCUSSION**

The prevalence of alcohol use among adolescents in European and North American countries is currently at an extremely high level, particularly in comparison to Japan. The descriptive results of this study concerning drinking patterns in young people are similar to those of two earlier Portuguese studies, not only in terms of the trend towards occasional and light drinking patterns, mainly on weekends, but also in terms of the percentage of intoxicated young people and age of first intoxication. This study showed that 42.0% of the students usually drank two to three beverages, and 25.0% drank four to six beverages on each drinking occasion, a pattern which corresponds to a definition of binge drinking. According to the WHO, such consumption takes place mainly on weekends (weekday abstinence), not during meals (in bars, pubs and discos) and with the intention of becoming intoxicated by heavy consumption of alcohol over a short period of time.

In this study, boys started drinking alcohol earlier (13.1 years) than did girls (14.1 years). However, no gender differences were found in current drinking pattern. The 2007 ESPAD Report describes gender differences in drinking pattern among some European countries, but confirms an overall European trend towards the homogenization of male and female consumption patterns. Our findings are also in accordance with results from other studies that underline a trend towards a gradual levelling of differences in the drinking patterns observed across genders.

In this study, no association was found between current drinking pattern and age of first drink. However, various researchers mention that the earlier the initiation of alcohol use, the more likely it is that the individual will develop an abusive relationship with alcohol, including alcohol dependence. Hence, further longitudinal research may be necessary to explore influences on the long–term patterns of drinking in this population of adolescents.

As to the drinking habits of the students’ relatives, 86.0% of the students reported no excessive alcohol consumption within their families. Nevertheless, a statistically significant correlation was found between these adolescents’ drinking patterns and excessive alcohol consumption by family members, since
the students with highest alcohol consumption were those whose family members were also excessive drinkers. Other studies\textsuperscript{7,8} similarly suggest that adolescents’ drinking behaviour is related to cultural and family contexts.

The results from this research indicate a weak positive correlation between alcohol consumption and extroversion in adolescents, showing a trend towards heavier consumption pattern among more extroverted individuals. These results reinforce those of other studies showing an association between extroversion and drinking pattern\textsuperscript{8}, and evidence of a higher risk for alcohol use initiation in young people with high levels of impulsivity, decreased fearfulness, and moderate–to–low levels of inhibitory control\textsuperscript{9}.

It was impossible from the results of this study to verify a relationship between neuroticism (or negative affectivity) and vulnerability to more excessive alcohol consumption. However, some studies have suggested that impulsive adolescents also characterized by low levels of positive affectivity evidenced higher levels of alcohol use and experienced more alcohol–related impairment than did impulsive adolescents with high positive affectivity or non–impulsive adolescents. Therefore, it is important to consider the multiple dimensions of temperament when examining adolescent drinking behaviour\textsuperscript{8}.

Because the study’s design was a cross–sectional survey, it is not possible to determine whether there was a pre–alcohol–use personality among the students. Another potential limitation to be considered in interpreting the results of this study is related to the limited sample size, which may not be representative of all Portuguese adolescents. Nevertheless, the sample was selected randomly from the community of interest and can be said to reflect accurately its unique urban and rural characteristics.

Conclusions

In this study, approximately 85% of the students considered themselves alcohol drinkers (80% of whom were light or occasional drinkers). The mean age of drinking initiation was 13.6 years, that of first intoxication was approximately 16 years, and 52% of drinkers had been intoxicated at least once.

Despite the later drinking initiation of girls, no gender differences were found in current drinking pattern. This study provides support for the theory that family context may function as a risk factor for adolescents’ alcohol consumption by promotion of the habit. Personality, meanwhile, seems to be a weak predictor of alcohol consumption that does not account entirely for inter–individual consumption differences.

References

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