Early First Drinking Experience and Behavioral Problems in Male and Female Adolescents

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Abstract

Early drinking experience is often associated with severe mental health problems. Recently, early alcohol consumption has increased and moved up. The aim of this study is to assess the relationship between early first drinking experience and behavioral problems in adolescents, males and females. Method: Three-hundred thirty adolescents (aged 11-14 years), living in the North East of Italy, participated in this study. They represented a 30% random sample of the school population of each site. Data were collected through group-administered questionnaires. The students answered the questionnaires anonymously in their classrooms and in the presence of the researchers. Results: 14.3% of the sample (boys, n=24; girls, n=19) reported having a first drinking experience before 11 years of age and a progression in alcohol use has been observed. In the multivariate analysis, early first drinkers (EFD) compared to non-EFD, were significantly more likely to have higher rule breaking scores (boys: OR=1.29; 95% CI 1.15-1.44; girls: OR=3.11; 95% CI 1.92-5.04). Conclusions: Clinicians should keep under close surveillance early first drinking habits in children aged less than 11 years and efforts should be focused on reducing alcohol consumption, particularly in light of the recent increase in the prevalence of adolescents’ binge drinking behavior.

Keywords

Drinking Onset; Rule-breaking Behavior; Emotional Behavior; Adolescence

Introduction

In Italy, the wine use is culturally accepted and, in moderate doses it is considered to be a less transgressive behavior than in North European Countries. It is generally accepted that kids drink some alcohol in a special day (birthday, Christmas, etc) and, at the age of 16 years, many adolescents drink beer or wine almost regularly [Cannavò et al, 2009]. Growing up, Italian people become more responsible in drinking habits, preferring quality over quantity.

Recently, early alcohol use has increased and moved up. Clinicians of the Italian Society of Medicine for Adolescents interviewed 2000 students aged 13 and they found that the first alcohol intake was in the 42% of the group, after 10 years of age, and in the 30% even younger than 10. More than a half (59%) drink alcohol to enjoy themselves, 45% to adjust to the group, 36% to get a high. Binge drinking behavior ranged from 15% at 16 years of age, to 21% at the age of 20-24 years [Osservatorio News, 2013].

Early first drinking experience and its association with later alcohol abuse and severe mental health problems have been reported in recent studies [Bu et al, 2012; Dawson et al, 2008; Jenkins et al, 2011; Mayzer et al, 2009; Schuckit et al, 2005; Suzuki et al, 2011]. Mayzer and colleagues [2009] found in a sample of 220 males that an early first drinking experience was associated with a later delinquent behavior, more than with a later aggressive behavior, and that this pathway was much more likely to be covered by individuals with high levels of delinquent behaviors already at 3-5 and 12-14 years of age while less common among individuals with low levels of delinquent behaviors. Our hypothesis is that the adolescent behavioral problems could be also related to the female early first drinkers.

The aim of this study is to assess the relationship
between early first drinking experience and behavioral, emotional and social problems in both, young males and females.

Method

The participants were 330 adolescents, aged 11-14 years, attending 7 public secondary schools (sixth-eighth grade), and living in the North East of Italy, in seven small sized mountain towns. The participants represented a 30% random sample of the school population of each site. Data were collected through group-administered questionnaires. The students answered the questionnaires anonymously in their classrooms in the presence of the researchers.

Measurements

A structured form was used to record information on socio-demographic variables (i.e.: age, gender, father and mother education). Satisfaction, for child to child (with other students among the classroom and the school) and child to adult (with the teachers and with the parents), relationships were self-assessed using a 4-point rating scale ranging from “not at all” to “completely true”. Higher scores reflected the more satisfactory relationship. Adolescents were asked at what age they first tried alcohol, excluding just a “sip” from an adult glass [Mayzer et al, 2009]. Emotional, behavioral, and social problems were assessed by the syndrome subscales of the Youth Self-Report (YSR) [Achenbach & Rescorla, 2001].

Data Analysis

Boys and girls that reported having had a first drink at about 10 to 11 years of age were designed as early first drinkers (EFD). Each child satisfaction score was dichotomized as 0-1 (no/yes). Syndrome scales were not scored if data were missing for more than 8 items, excluding opened-response items, or socially desiderable items (29 questionnaires, for 29 participants). Therefore there were 29 excluded (response rate = 91.2%).

Data were summarized descriptively with means, standard deviations (SDs), medians and interquartile ranges (IQRs) for numerical variables and percentages for categorical variables. Comparison between groups relying on categorical variables were performed with the chi-square statistic or the Fisher’s exact test, as appropriate. Quantitative continuous data were compared using the non-parametric Mann-Whitney or Kruskal-Wallis tests as normal distribution of the data could not be assumed.

Univariate and multivariate odds ratios (ORs), and associated 95% confidence intervals (CIs) for potential variables associated with EFD were estimated using logistic regression models. We used the following model-building process: firstly, we assessed bivariate associations between the dependent variable (separately for males and females) and each of the potential covariates; the covariates not significantly associated with the outcome (p>.10) were dropped from further consideration in the outcome modelling. The remaining candidate covariates were entered into a multiple regression model and were subjected to backward selection until all the remaining covariates had p-value <.05, adjusted for the other remaining covariates. Age was treated as confounding variable. Akaike’s information criteria and the likelihood ratio test were used to define the multivariable model.

All the analyses were run separately for boys and girls. All the statistical analyses had been performed using STATA, version 11.0 (StataCorp, College Station, Tex).

Confidentiality and Ethics

Data were collected through anonymous self-report questionnaires distributed in the classroom. Both, study papers and database, were kept anonymous and confidential. The study procedure was in accordance with the ethical guidelines of the modified 1975 Declaration of Helsinki. Youth assent and parental written informed consent were obtained as required by the participating school districts.

Results

The mean age of the 301 subjects evaluated study sample was 12.5 years (SD 0.7; range 11-14), 153 of which were females (50.8%). In total 14.3% of the sample (boys, n=24; girls, n=19) reported having a first drinking experience before 11 years of age (early first drinkers, EFD), whereas 85.7% (boys, n=121; girls, n=134; gender not declared, n=3) did not (non-EFD). Significant differences emerged about the age (4.6% at 11, 16.3% at 12, 60.5% at 13, 18.6% at 14; Pearson chi-squared(3) = 23.69, p = .000). No interaction between gender and age had been found. For both, boys and girls, no differences emerged in EFD accounting for father’s or mother’s education nor satisfactory relationship with other children among classroom and the school. Dissatisfactory relationships with teachers or parents had been found, instead, associated with EFD in the boys group (chi2(1) 6.27, p = .012; chi2(1)
10.57, p = .001, respectively).
All EFD-boys and girls (100%) answered the item #2 (I drink alcohol without my parents’ approval) that they did it at least sometimes in the last 6 months. Among the non-EFD, only 12 (4.7%), evenly distributed per gender, had done it. In the group of 55 actual drinkers, 26 (47.3%) had smoked cigarettes versus 12 (4.9%) of actual non-drinkers, and 7 (12.7%) had used marijuana or cocaine versus 7 (2.8%) of the non-drinkers.

Descriptive statistics for drinking onset group for the syndrome scales (YSR) are reported in Table 1, separated according to gender. Among early drinking boys, the rule breaking behavior, the aggressive behavior, the attention deficit and the thought problems median scores were significantly higher compared to those calculated among the boys that did not drink (median 9.5 versus 3; 10.5 versus 6; 8 versus 5, and 5 versus 3, respectively). Among the girls, those in the group EFD reported significantly higher scores in all the syndrome scales, except for social problems, and at the edge of significance for anxiety/depression.

EFD experience in boys was significantly associated with more positivities in rule breaking behavior, aggressive behavior, attention deficit, thought problems, dissatisfaction for the relationship with teachers and with parents. In the multivariate analysis, early first drinkers, compared to non-EFD, were significantly more likely to have higher rule breaking scores (OR=1.29; 95%CI 1.15-1.44). Among the girls, in the bivariate analysis, many more syndrome scales were significantly associated with EFD, compared to boys. However, in the multivariate analysis, girl’s early first drinkers, compared to girl’s non-EFD, were significantly more likely to have higher rule breaking scores (OR=3.11; 95%CI 1.92-5.04).

**Discussion**

This study shows the association between rule breaking behavior and early first drinking in Italian males and females aged 11-14. Specifically, we found that in univariate analyses many different behavioral problems were associated with early-onset drinkers. Moreover, after adjusting for covariates, the final multivariate model, separately described for boys and girls, suggested that only a higher rule breaking behavior, compared to a lower rule breaking behavior, was associated with EFD. Our results are consistent with the findings from a previous study showing that, in a 10-year longitudinal study on 220 males children, early first drinking was expected among children with high levels of delinquent behavior at both, 3 to 5 and 12 to 14 years of age, but uncommon among children with low levels of delinquent behavior in the same two age periods [Mayzer et al, 2009]. Moreover, these findings can be extended to the female gender.

![Table 1](https://www.seipub.org/ijss)

**TABLE 1. DESCRIPTIVE STATISTICS (MEANS, STANDARD DEVIATIONS –SD-, MEDIANs, INTERQUARTILE RANGES –IQR-, AND MINIMUM AND MAXIMUM SCORE) BY DRINKING ONSET GROUP FOR YSR SYNDROME SCALES (BOYS, N=145; GIRLS, N=153; 3 RESPONDENTS WITH NO-DECLARED SEX HAVE BEEN EXCLUDED FROM THE TABLE).**

<table>
<thead>
<tr>
<th></th>
<th>EFD (N=24)</th>
<th>Non-EFD (N=121)</th>
<th>p-value *</th>
</tr>
</thead>
<tbody>
<tr>
<td>N of items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxious/depressed</td>
<td>13</td>
<td>6.0 (5.5)</td>
<td>0.22</td>
</tr>
<tr>
<td>Withdrawn/depressed</td>
<td>8</td>
<td>4.0 (3.8)</td>
<td>0-15</td>
</tr>
<tr>
<td>Somatic complaints</td>
<td>10</td>
<td>4.5 (3.5)</td>
<td>0-20</td>
</tr>
<tr>
<td>Social problems</td>
<td>11</td>
<td>4.7 (3.4)</td>
<td>0-14</td>
</tr>
<tr>
<td>Thought problems</td>
<td>12</td>
<td>7.1 (6.1)</td>
<td>0-22</td>
</tr>
<tr>
<td>Attention problems</td>
<td>9</td>
<td>8.5 (3.6)</td>
<td>2-14</td>
</tr>
<tr>
<td>Rule-breaking behavior</td>
<td>15</td>
<td>10.0 (6.0)</td>
<td>1-25</td>
</tr>
<tr>
<td>Aggressive behavior</td>
<td>17</td>
<td>11.5 (6.5)</td>
<td>0-27</td>
</tr>
</tbody>
</table>

*Kruskal Wallis test

<table>
<thead>
<tr>
<th></th>
<th>EFD (N=19)</th>
<th>Non-EFD (N=134)</th>
<th>p-value *</th>
</tr>
</thead>
<tbody>
<tr>
<td>N of items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxious/depressed</td>
<td>13</td>
<td>7.7 (3.8)</td>
<td>1-14</td>
</tr>
<tr>
<td>Withdrawn/depressed</td>
<td>8</td>
<td>4.4 (2.6)</td>
<td>0-10</td>
</tr>
<tr>
<td>Somatic complaints</td>
<td>10</td>
<td>6.1 (4.6)</td>
<td>0-15</td>
</tr>
<tr>
<td>Social problems</td>
<td>11</td>
<td>4.2 (3.6)</td>
<td>0-13</td>
</tr>
<tr>
<td>Thought problems</td>
<td>12</td>
<td>6.2 (4.4)</td>
<td>1-15</td>
</tr>
<tr>
<td>Attention problems</td>
<td>9</td>
<td>6.8 (3.4)</td>
<td>1-13</td>
</tr>
<tr>
<td>Rule-breaking behavior</td>
<td>15</td>
<td>7.3 (2.6)</td>
<td>3-13</td>
</tr>
<tr>
<td>Aggressive behavior</td>
<td>17</td>
<td>10.2 (3.9)</td>
<td>4-19</td>
</tr>
</tbody>
</table>

*Kruskal Wallis test
As proposed by Buu and colleagues [2012], adolescent psychological and legal problems may be good indicators for later stages of alcoholic progression.

In our sample, 43 adolescents (14%) declared to have drunk alcohol before 11 years of age. Despite the short time passed between the drinking onset and the enrollment in this study (0-3 years), a continuity in alcohol use had been found. All EFD subjects (n=43) answered positively to the item “I drink alcohol without my parents’ approval”. The prevalence of alcohol use among children in this study is low, despite we had chose to conduct the study in North East Italy mountain areas because of the average high rate of alcohol consumption among the adults and the traditionally tolerant attitude towards alcoholic drinks, presuming that both of those factors could affect the use among teenagers. We had also decided to use anonymous self-rating questionnaires administered in their usual classrooms by the researchers to facilitate disclosure.

As reported in other study, there was a variability in the prevalence of adolescent drinkers (ranging from 7.3% to 25%) [Cannavò et al, 2009; Schuckit et al, 2005; Sturua et al, 2010], probably due to the different cultural habits, and to the resistance to disclosure.

Some limitations in this work should be taken into consideration. First, alcohol habits and behavioral problems were collected by using self-rated questionnaires. We don’t know how many other adolescents would have a positive diagnosis with a more accurate procedure (underestimation) or if a more accurate procedure would exclude the present problem in some adolescents (overestimation). Second, the information about the type of alcoholic beverages and the quantity assumed were not assessed. We don’t know if the same results would be observed if these variables had been taken into account. Third, the North East of Italy is a peculiar geographic area because of the production and the consume of wine. Therefore the study sample could not be considered representative of all other Italian regions. Despite these potential limitations, the clinical implications of this study may be that we should pay close attention to the early first drinking in children aged less than 11 years. As the matter of fact, the clinical observation is that parents often ask for medical or psychiatric consultation because of behavioral problems but never worry for early alcohol use. The main reasons for the lack of the detection of inappropriate alcohol consumption are that, initially it is culturally accepted and, later, the drunkenness becomes out of the family control.

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