“Drunkorexia”: a pilot study in an Italian sample

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Abstract
In recent years, several scientific studies have demonstrated an association between alcohol misuse and eating disorders. Aim of the study was to investigate the spread of the binge drinking phenomenon and to assess the possible concomitant presence of abnormal eating behaviour, in a population of Italian young adults. A questionnaire investigating socio-economic characteristics, alcohol use, abnormal eating behavior and substance use, has been administered to a sample of approximately 3000 subjects, aged between 18 and 26 years old. In this paper, 1311 subjects have been evaluated as a pilot study. The results showed an high habitual alcohol consumption (80.5% of the total sample) and a prevalence of binge drinking to 79.8% among those who habitually consume alcohol (66.5% compared to general population). Peculiar is the percentage of subjects that reported to limit their calorie intake before drinking (32.2%), with a statistically significant prevalence among those who consumed alcohol regularly. Our results reveal an escalation of alcohol misuse higher than other Italian and European studies and give dignity to the concept of “drunkorexia” as a common phenomenon also among Italian young adults.

KEY WORDS: alcohol, binge drinking, eating disorders.

Introduction
Alcohol misuse and eating disorders represent two popular phenomena worldwide. Although their psychopathological roots appear to be distinct and unrelated, in the recent few years they have been described as concomitant manifestations, specifically in adolescents and young adults (1-4).

The consumption of alcoholic beverages is considered in Italy, as in many Western countries, as a part of social life in general, but the excessive consumption and the introduction of new lifestyles have changed this tradition dramatically, increasing alcohol-related risks in both personal and social development. The globalization of alcohol consumption patterns has caused the diffusion, also in Italy, of habits more common in the United States and in Northern Europe, such as the binge drinking, mainly involving the youngest population.

Binge drinking is defined as the consumption of 5 or more drinks in succession for men and 4 or more drinks for women, in one or more occasions during the past 2 weeks (5). The National Institute of Alcohol Abuse and Alcoholism (NIAAA), identifies instead a binge drinking behaviour when five or more alcoholic drinks (four or more for women) are ingested on any occasion, at least once a week (6). The above-mentioned definitions do not include the type of alcoholic beverage, or whether alcohol dependence coexists: the main purpose of “binge drinkers” is in fact an immediate intoxication, as well as the loss of control.

One in three Europeans who consumed alcohol within the past 30 days report at least one episode of binge drinking per week. The most affected age group is the one between 15 and 24 years old. Binge drinking is very common among males, especially during adolescence and in the vicinity of maturity. Young people (18-26 years old) represent the segment of population in which the distribution of risky behaviours is higher. In particular, the consumption pattern most common among young people sees a high prevalence of binge drinking (22.1% of males and 6.5% of females), which represents almost the total of the overall risk (7). In Italy the phenomenon involves 11.1% of men and 3.1% of women; the most affected age group is 18 to 24 years old (8).

Binge drinking episodes are characterized by: excessive alcohol consumption, rapid alcohol intake, drink-
ing with the aim of getting drunk, drinking with friends and/or in relation to specific events; upsetting of daily activities, friendships, relationships, family dynamics, because of the subject being frequently foggy and confused (9).

The major risks of binge drinking are the same as for other addictive substances. The main one is undoubtedly related to intoxicated driving; besides causing extensive damages to the drinker, this may also be a source of danger to others. Long-term effects may include mental and physical health consequences, such as worsening of school and/or work performance, introduction to drug use and unplanned sexual activities. Drinking has also an influence on mood, which tends to swing between euphoria and demoralization, till an actual depression (10, 11).

Cognitive performances may also be impaired, with the onset of focusing, learning and memorization problems (both long and short term memory may be involved). These may strongly affect the subject’s life, determining confusion and reduced attention span not only in school/work activities, but also in simple daily tasks. Finally, a number of pathophysiological consequences are also possible: neurological, cardiac, gastrointestinal, haematological, immune, endocrine and musculoskeletal alteration may arise, and act as further risk factors for mental health (12, 13).

In recent years, several scientific studies have demonstrated an association between use of alcohol and unhealthy food habits; a positive correlation has also been observed, from a genetic point of view, among restrictive diets, frequency of alcohol consumption and binge drinking behaviour (1-3, 14).

The term “drunkorexia” has been proposed by a journalist of the “New York Times”, but currently it is not yet recognized by “mainstream” medicine (15). It has been coined to explicit the characteristics of an eating disorder linked to alcohol abuse, “drunk” plus “anorexia” (16). This definition refers to a new, abnormal and dangerous eating habit, prevalent among adolescents: restricted eating, until fasting, to be able to intake large amounts of alcohol. The choice of fasting is related to both the possibility of drinking freely, without worrying about the calories, and to enjoy more the intoxicating effects of alcohol (4, 17).

That being so, we propose to investigate the spread of the binge drinking phenomenon in a population of Italian young adults by administering a questionnaire, also aimed at assessing the possible concomitant presence of abnormal eating behaviour. Aim of the study is to gain more information about the main motivations, personality, environmental and socio-cultural characteristics of adolescents and young adults consuming alcohol and showing peculiar eating habits.

Methods

A questionnaire has been administered to a sample of approximately 3000 subjects, aged between 18 and 26 years old. It has been designed by comparing different theories and points of view about abuse and addiction. In this paper, 1311 subjects have been evaluated as a pilot study. The data were collected between September 2013 and January 2014; the questionnaire was self-administered in an anonymous way by our team of psychologists and psychiatrists, with the support of a peer group working. We investigated socio-economic characteristics (age, gender, residence, job status, level of education, living status), alcohol use with a specific focus on binge consumption, abnormal eating behavior and substance use (tobacco, caffeine, cannabis, cocaine and Novel Psychoactive Substances-NPS).

All participants received a detailed explanation of the design of the study and a written informed consent was systematically obtained from every subject, according to the Declaration of Helsinki. The data collection was carried out in an anonymous and confidential way; the selected sample resides in different Italian cities, located in the north, centre and south of the country, to ensure the inclusion of youths from diverse social and provenance contexts. The random procedure was the Snowball sampling (18).

Baseline data were analysed using descriptive statistics, including means and standard deviations, frequencies and percentages. The Chi-square ($\chi^2$) test, Fisher’s exact test and non-parametric Wilcoxon-Mann-Whitney test were used for comparisons of qualitative data. Quantitative variables were summarized by means and medians and compared using the Student’s t-test. Factors with a $p$ value lower than 0.25 were included in the multivariate analysis and $p$ value lower than 0.05 was considered to be significant. SPSS version 14.0 was used for all analyses.

Results

At present, data from a preliminary sample of 1311 subjects have been analysed. The pilot sample includes 622 males (47.4%) and 689 females (52.6%); mean age was 22.05 years, with no significant gender differences. The socio-demographic data indicated that the majority of respondents had attended high school (70.6%) and was living with parents (71.5%). In addition, 58.1% of the subjects were students (Tab. 1).

80.5% of the sample habitually consumed alcoholic beverages, while 19.1% were not habitual consumers. In the male/female comparison, male subjects showed a significantly higher habitual alcoholic consumption (86.7% vs 75.3%; $p <0.001$).

The frequency of alcohol consumption was less than once a week for 29.5% of subjects; 34.7% drank alcohol once a week, 26.6% two to three times a week and 2.2% almost every day. 56.1% drank 1-2 units of alcohol (u.a.) at a time, 26.2% 3-4 u.a. at a time, 10.1% 5-6 u.a. at a time, 4.8% 7-8 u.a. at a time, and finally 2.8% 9 or more u.a. at a time (a unit of alcohol corresponds to a drink containing 12 grams of ethanol) (19). Among consumers, males compared with females ingested an higher number of u.a. per day ($p <0.001$).
66.5% of respondents had binge drinking behaviour, with a statistically significant predominance of males over females (79.2% vs 56.8%; p <0.01). Among regular alcohol consumers, 79.8% had binge drinking habits, resulting in habitual alcohol consumption as a predictor of binge (p <0.001). Despite this, 13% of those who did not consume alcohol regularly sometimes had binge drinking habits. Among binge drinkers, 2.5% practiced it every day, 11.5% 2-3 times a week, 21.2% once a week and 64.8% less than once a week.

Among binge drinkers, 98.2% consumed alcohol with friends (p <0.001); after a heavy drinking session, 51.1% lost control, 12.4% claimed to be unconscious, 5.1% had been hospitalized, 33.6% had episodes of aggressiveness, 44.9% were sexually uninhibited and 22.7% were taking drugs the following day.

Men lost control more frequently than women (p <0.46); they also fainted more frequently after alcohol misuse (p <0.019), were more frequently aggressive (p <0.001) and sexually disinhibited (p <0.033). Women, instead, took more frequently medications the day after a heavy drinking session (p <0.001), although most of the parameters related to the severity of alcohol intoxication are in percentage higher in males.

With regard to eating behaviour, our data highlighted that in the last 30 days, 20.15% of subjects had undertaken a diet in order to lose weight, 1.75% had vomited or taken laxatives in order to lose weight, 0.55% had taken drugs and 32.8% exercises for the same reason; there were no statistically significant differences between those who consumed alcohol and those who did not, and between those with binge drinking habits and those without.

Moreover, females had followed a diet in the last month more frequently in comparison with males (p <0.001), while there were no significant differences between sexes in self-induced vomiting, medications use and exercise.

Finally, 32.2% of subjects (with no statistically significant difference between males and females) reported to limit their calorie intake before drinking, with a statistically significant prevalence among those who consumed alcohol regularly compared to those who did not (p <0.001).

**Discussion**

Our data on habitual alcohol consumption (80.5% of the total sample) confirm the results of the World Health Organization (WHO), that highlight how European countries play a pivotal role in the global consumption of alcohol (20), and the data processed by Italian National Institute of Health (21). The available data also indicate a 66.5% prevalence of binge drinking compared to general sample; 79.8% among those who habitually consume alcohol show binge drinking habits, with a statistically significant predominance of males (p <0.001).

These percentages are higher than those evidenced by other European studies focused on the same type of population (22, 23). An analysis by European Union (Eurobarometer, 2010) highlighted the highest prevalence rates in Ireland (44%), while in Italy results were around 30% (24).

On the other hand, in a study performed in the United States on 20,138 subjects, the percentage of binge drinkers was 63% (25) and in a study conducted in 6 European countries the percentage of binge drinkers was between 50% and 72%, attesting a percentage of binge alcohol consumption comparable to our results (26).

Moreover, our rates are higher than those reported by previous studies focused exclusively on Italian subjects (27, 28).

Data on the effects of alcohol intoxication are also relevant (33.6% of aggressiveness and 44.9% of disinhibition are peculiarly relevant) and confirm the impairment of alarm thresholds and the lack of ability to control behaviours already emerged in scientific literature (29-31).

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>SUBJECTS NUMBER</th>
<th>PERCENTAGE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male:622</td>
<td>Female:689</td>
</tr>
<tr>
<td></td>
<td>Male:47.4%</td>
<td>Female:52.6%</td>
</tr>
<tr>
<td>Level of Educational</td>
<td>Primary Degree:3</td>
<td>Primary Degree:0.2%</td>
</tr>
<tr>
<td></td>
<td>Middle School:84</td>
<td>Middle School:6.4%</td>
</tr>
<tr>
<td></td>
<td>High School:920</td>
<td>High Scholl:70.6%</td>
</tr>
<tr>
<td></td>
<td>University:297</td>
<td>University:22.8%</td>
</tr>
<tr>
<td>Job Status</td>
<td>Student:762</td>
<td>Student:58.1%</td>
</tr>
<tr>
<td></td>
<td>Student/Worker:153</td>
<td>Student/Worker:11.7%</td>
</tr>
<tr>
<td></td>
<td>Worker:265</td>
<td>Worker:20.1%</td>
</tr>
<tr>
<td></td>
<td>Unemployed:132</td>
<td>Unemployed:10.1%</td>
</tr>
<tr>
<td>Living Status</td>
<td>Parents:936</td>
<td>Parents:71.5%</td>
</tr>
<tr>
<td></td>
<td>Friends:226</td>
<td>Friends:17.3%</td>
</tr>
<tr>
<td></td>
<td>Alone:101</td>
<td>Alone:7.7%</td>
</tr>
<tr>
<td></td>
<td>Partner:46</td>
<td>Partner:3.5%</td>
</tr>
</tbody>
</table>
As for the relationship between alcohol consumption and abnormalities of eating behaviour, our results show a surprising 32.2% of subjects that reduce calories intake before drinking; those who consume alcohol regularly skip meals more frequently than those who do not (with not statistically significant difference between those who do and those who do not). These data exceed significantly the results of similar studies, in which the percentage of subjects who declared to practice a calories restriction before consuming alcoholic beverages was not over 14% (1, 4). The motivation behind this new phenomenon may be sought in maintaining body weight while continuing to consume large amounts of alcohol, and in amplifying the effects of alcohol yielding to peer pressure. Social pressure to always be perfectly fit, combined with the culture of "high", may influence young people to resort to extreme measures in order to feel accepted by society.

Conclusions

In our sample, nearly 80% of young adults who use alcohol are also binge drinkers. This result is higher than those obtained in other Italian (20, 21) and European studies (25, 26), and represents a potential risk to public health, and a continuous change in the patterns of alcohol consumption among young people. Considering this, a careful and constant monitoring and the development of preventive measures would be needed to deal with the escalation of alcohol misuse. On the other hand, in accordance with recent studies conducted in the United States (1, 4, 14), our preliminary data give dignity to the concept of "drunkorexia" as a common phenomenon also among Italians young adults and, despite what is reported by the media, it not only affects the female population but also the masculine. Raising awareness about the concurrence of these issues may help physicians and operators when dealing with these cases, and it may also increase the chances of developing early interventions and combined strategies of treatment. We propose to increase the number of available data in order to have more accurate and meaningful measures.

References

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