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Adolescent males in secondary school in Ireland: Alcohol Use and depressed mood

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Abstract

Per capita alcohol consumption by Irish teenagers has doubled over the past three decades. There has also been a doubling of the suicide rate among young men. The aim of this study was to measure the correlation between alcohol consumption and negative mood (as measured by elements of the Beck Depression Inventory) in a sample ($n = 169$) of final-year secondary school male students. A questionnaire was devised to ascertain frequency, type and quantity of alcohol consumed, as well as attitudes towards drinking in general. The questionnaire also assessed overall mood disturbance, and these two sets of results were analysed and correlation coefficients calculated. It was found that both alcohol consumption and mood disturbance varied widely throughout the sample and that total alcohol consumption correlated weakly but significantly with overall mood disturbance. However, there was a stronger, more significant correlation between frequency of feeling drunk and mood disturbance, indicating a much greater effect on the teenagers' mood from binge drinking than from consistently drinking the same quantity of alcohol.

Introduction

This research arose from the finding that adolescent male secondary school students in Ireland generally have a poor understanding of mental health (Burke *et al.*, 2008; Kerr *et al.*, 2011), giving significant support to statements such as “*Drinking alcohol can help cure depression*”. Thus, it was decided to investigate the correlation between alcohol consumption and mood for adolescent males in Ireland.

Having significantly increased between 1995 and 2003, the rate of consumption of alcohol in Ireland by adults (defined as 15-years old or greater) has moderated or even decreased in recent years (WHO, 2011, 275). Ireland is now placed 15th out of 188 countries for total alcohol consumption, with almost half of Irish male adolescents binge drinking at least once a week (Condon, 2003; Mongan, 2010). This places Ireland just above the European average for frequency of heavy episodic drinking by adolescents. However, the quantity of alcohol consumed by each person on such occasions (6.7cl) is substantially higher than the European average of 5.1cl (Hibell *et al.*, 2012, 110). In Ireland, alcohol is often used as a means of coping with emotional difficulties (Featherstone *et al.*, 2007) even though the connection between heavy binge drinking sessions and depression is well established (Hope, 2008; Wu *et al.*, 2006). In particular, chronic consumption of alcohol tends to significantly lower overall mood (Dawes and Johnson, 2004).

Mental health in adolescence is a serious issue (Hauenstein, 2003; Kessler *et al.*, 2001; Möller Leimkühler *et al.*, 2007; Sampson and Mrazek, 2001; Sharp and Lipsky, 2002) with about 6% of male adolescents suffering from depression (Eapen and Črnčec, 2012). Males are far less likely than females to seek professional help for any mood disorder (Featherstone *et al.*, 2007; McKeon, *et al.*, 2006), and far more likely to have a negative image of mental

health professionals (Kerr *et al.*, 2011). This can have very serious consequences, including suicide. The rate of suicide in Ireland remains high, with 486 deaths by suicide in 2012 (CSO, 2013), exactly three times the number of people who died on the roads (RSA, 2013). Of these suicides, 386 (79.4%) were by males. The rate of suicide among young males is described as “amongst the highest in the EU” (O’Regan, 2013). This present research examines one possible cause of depressed mood – alcohol consumption. This is in line with the recommendations of the Health Service Executive in “Reach Out”, their strategy for preventing suicide (HSE, 2005), where they aim to “challenge permissive, harmful attitudes to alcohol abuse”, “reduce overall consumption rates” and raise awareness of the link between alcohol and poor mental health.

A recent European study (Hibell *et al.*, 2009) found that 78% of Irish fifteen-year old boys used alcohol in the previous year (European mean: 82%) and that 47% of them had been drunk in that period (European mean: 39%). Many international authors describe a pattern of young adolescent males drinking heavily and frequently in order to get drunk (Andersson *et al.*, 2007; Hibell and Guttormsson, 2010; Aertgeerts and Buntinx, 2002). In a meta-analysis of research on the Irish situation, Alcohol Action Ireland (2011) established clear and substantial connections between consumption of alcohol and negative mood and suicidal behaviour, including exacerbating depression and enabling an adolescent to act on suicidal thoughts which he/she might never have done if not under the influence of alcohol. Sullivan *et al.* (2005), in another meta-analysis, and others (Archie *et al.*, 2012; Fuller-Thomson *et al.*, 2013; Pedrelli *et al.*, 2013) reached similar conclusions, finding a clear link between depressed mood and binge drinking. Concern around this connection is also to be found on internet sites about alcohol abuse, such as Helpguide, MedicineNet and Adolescent Substance Abuse.

Thus, international literature shows a consistent picture of young men binge drinking frequently, with a history of untreated mental health issues. This research aims to get a clear picture of alcohol consumption and associated mood in male secondary school students in Ireland, and to compare this with the literature. The null hypothesis, therefore, is that the consumption of alcohol by adolescent male secondary school students does not affect their overall mood.

Method

Participants

A convenience sample was used, with all participants being sixth-year male pupils in three secondary schools in a medium-sized town in Ireland (population ~ 20,000). Each school held around 300 students and catered for a mixed middle-class and working-class clientele. Two of the schools were coeducational; the third was boys only. Participation in the research was entirely voluntary. A total of 169 pupils out of a population of 176 (96% participation rate) took part. No pupil refused; the remaining pupils were absent on the day of administration. Because of the participants’ ages, the principals decided that parental permission to take part was not necessary. The great majority of the participants (157, 92.9%) were either 17 or 18 years of age (mean = 17.6 years, standard deviation = 0.62 years); the remaining 12 (7.1%) were aged either 16 or 19. A majority of the students (108, 63.9%) lived in the town; 24 (14.2%) lived in local villages and 37 (21.9%) in rural areas.

Materials

The questionnaire was structured in three parts, beginning with questions from other research in Ireland (Morgan *et al.*, 2009) about participants’ consumption of alcohol, frequency and

types of alcohol drunk, effects of their drinking and opinions about why their friends drink. Part 2 related to the participants' mood in the previous few weeks. This section was based on items (#1, 2, 5, 11, 12, 13, 16, 17 and 18) taken from the Beck Depression Inventory 1961 and 1996 versions (BDI-I and BDI-II) and chosen to coincide with the criteria used by Aware Defeat Depression (ADD website) when assessing someone's mood. The BDI is clear and simple to administer and indicates the likelihood of a depressive mood disorder. Its validity has been well established, with internal consistency around 0.86 and a Pearson correlation coefficient of 0.77 with psychiatric evaluations (Beck and Steer, 1984; Beck *et al.*, 1996a; Beck *et al.*, 1996b; Bumberry *et al.*, 1978; Richter *et al.*, 1998). The BDI has also been validated for use with adolescents as young as 14 years (Sharp and Lipsky, 2002; Suominen *et al.*, 1997). This scale clearly differentiates "normal mood pattern" from a "mild depression/depressed mood" (where there is some disturbance to major indicators such as feelings, energy levels, sleeping, and thought processes) and from a "clinical depression" where disturbance to indicators is more pronounced and which requires some professional treatment (see Table 4). The third part of the questionnaire consisted of demographic questions and a space for general comments.

Procedure

On the day of administration the participants were thanked for volunteering to take part in the research. The questionnaires were then completed in silence while seated at separate desks. This took approximately fifteen minutes. Questions and comments taken at this stage showed a high level of interest in the research. Following an initial analysis of the questionnaires a letter of thanks was given to each participant. This was distributed by the school principal and included some outline results together with telephone numbers for appropriate support agencies such as Alcoholics Anonymous and the Samaritans.

Results

There was a 100% response rate for all questions.

A large majority of the participants (158, 93.5%) had tried alcohol at some time in their lives. Of these, more than 70% (111) had started drinking by the age of 15; 46 (29.1%) began by age 13 and three (1.9%) started aged ten or younger. Almost three-quarters of those who had been drinking in the previous year (74.7%, 118) drank at least once a month; 55 (35.7%) drank at least once a week, and two students (1.3%) drank at least five days per week on average. The modal response was "once or twice a month" and 115 students (68.0% of the total sample) admitted to drinking weekly or monthly. In the week preceding administration of the questionnaire (shortly before the students' mock-Leaving Certificate examinations), half the sample (88, 52.1%) had taken a drink (mean = 1.78 days). Two (1.2%) drank every day and a further five (2.9%) drank on five or six days.

The participants consumed 760 units of alcohol in the preceding week (mean = 8.6 units per student drinking), mostly as beer or cider (61.7%) with about one-quarter (24.7%) as spirits. Eighty one students (47.9%) didn't drinking at all in that week but 21 (12.4%) drank 12 or more units each. Nine students (5.3%) drank between 12 and 20 units in a single occasion, and the maximum consumed by any one pupil was 44 units. This compares unfavourably with the upper limit of 21 units per week recommended by the Department of Health and Children (Morgan *et al.*, 2009).

A large majority (138; 81.6%) of the sample had been drunk during the previous year, with almost half (78; 46.1%) being very drunk at least once a month, and 11 (6.5%) pupils being very drunk at least once a week (Table 1). The mean values here are equivalent to being very

drunk 19 times during the year with a hangover 14 times. There was a moderate but significant correlation (Pearson's $r = 0.31$, $p < 0.001$) between being very drunk and having a hangover.

Table 1: Frequency of getting very drunk and of having a hangover in the previous year

Frequency	Getting very drunk		Having a hangover	
	Number	%	Number	%
Never	31	18.4	55	32.5
A few times	26	15.4	37	21.9
Every couple of months	34	20.1	30	17.7
Once or twice a month	45	26.6	39	23.1
Several times a month	22	13.0	5	3.0
At least once a week	11	6.5	3	1.8
Totals	169	100.0	169	100.0

Just under half the drinkers (46.7%) – and none of the non-drinkers – were involved in at least one form of antisocial behaviour (ASB) after drinking (mean = 1.9 types), with more than 10% involved in three or four types. The most common antisocial behaviours were getting into a heated argument or damaging something, but getting into a fight (16.3% of the drinkers) or missing school (15.7% of the drinkers) also featured strongly.

Respondents were asked why adolescent males drink. There was strong support (71.9%) for these statements (“strongly agree” scored 4; “strongly disagree” scored 0), especially for “*They drink because they like getting drunk*” (mean = 3.14) and “*They drink because they like going to pubs and clubs*” (3.07), followed by “*They drink because it makes them feel more confident*” (2.83). The other three items (“*They drink because it helps them relax*”, “*They drink to fit in with their friends*” and “*They drink because they are bored and have nothing else to do*”) were also well supported but less strongly (2.57, 2.57, and 2.55 respectively).

The questionnaire then gave 12 mood statements, asking respondents to rank each with one of five options ranging from “strongly agree” to “strongly disagree”. There was little discrimination among the items (mean = 1.64; standard deviation = 0.17). The statement about sleeping worse than usual was the closest indicator to overall mood. The two items about energy levels indicated greater than average mood disturbance and those about feeling guilty and appetite change indicated less than average mood change (Table 2).

Table 2: Frequency and scores on Section E: Mood

Score:	Strongly agree, 4	Agree, 3	Neither, 2	Disagree, 1	Strongly disagree, 0	Total score:	Mean score:
More stressed	12 (7.1%)	41 (24.3%)	27 (16.0%)	63 (37.3%)	26 (15.4%)	288	1.70
Less energy	15 (8.9%)	43 (25.4%)	30 (17.8%)	64 (37.9%)	17 (10.1%)	313	1.85
Sleeping worse	10 (5.9%)	35 (20.7%)	25 (14.8%)	79 (46.7%)	20 (11.8%)	274	1.62
Poor concentration	8 (4.7%)	41 (24.3%)	36 (21.3%)	68 (40.2%)	16 (9.5%)	295	1.75
Low enjoyment	8 (4.7%)	27 (16.0%)	26 (15.4%)	86 (50.9%)	22 (13.0%)	251	1.49
More discouraged	17 (10.1%)	36 (21.3%)	33 (19.5%)	61 (36.1%)	22 (13.0%)	303	1.79
Feeling guilty	9 (5.3%)	18 (10.7%)	27 (16.0%)	89 (52.7%)	26 (15.4%)	233	1.38
Unhappy	13 (7.7%)	28 (16.7%)	31 (18.3%)	69 (40.8%)	28 (16.6%)	267	1.58
Less patience	12 (7.1%)	39 (23.1%)	30 (17.8%)	71 (42.0%)	17 (10.1%)	296	1.75
Appetite changed	1 (0.6%)	31 (18.3%)	27 (16.0%)	88 (52.1%)	22 (13.0%)	239	1.41
Less interest in people	2 (1.2%)	34 (20.1%)	31 (18.3%)	84 (49.7%)	18 (10.7%)	256	1.51
More energy in evening	12 (7.1%)	46 (27.2%)	36 (21.3%)	62 (36.7%)	13 (7.7%)	320	1.89
Totals:	119 (5.9%)	419 (20.7%)	359 (17.7%)	884 (43.6%)	247 (12.2%)	-	19.73

Table 3: Conversion from Mood score to depression rating

Mood disturbance score	Implication
0 – 7	Normal mood pattern
8 – 12	Mild depression
13 – 15	Borderline clinical depression
16 – 23	Moderate depression
24 – 30	Severe depression
31 – 48	Extreme depression

A new variable, *Mood*, measuring the mood disturbance for each student, was calculated by adding their scores for each item in section E. These scores were then converted into an indication of the student's mood, as in Table 3 (Burns, 1981). The values for *Mood* (mean =

19.73; standard deviation = 7.74) indicated moderate depression among the pupils. The maximum *Mood* score was 40, showing a very serious mood problem for that individual.

Mood was then checked for correlation with total alcohol consumption in the previous week, usual frequency of drinking, and frequency of getting very drunk. Each value of Pearson's correlation coefficient r was low and positive but all were significant:

Mood and alcohol consumed in previous week: $r = 0.17, p < 0.025$
 Mood and usual frequency of drinking: $r = 0.13, p < 0.05$
 Mood and frequency of getting very drunk: $r = 0.13, p < 0.05$

These weak correlations were surprising since a pre-trial with 34 pupils had found a strong, significant correlation ($r = 0.629, p < 0.001$) between mood and frequency of getting very drunk.

Table 4: Mean mood scores per frequency of getting drunk

How often drunk in previous year	Approximate number of times drunk in previous year, n	Mood score, M	Number of students, N	Mean mood score, M/N
Never	0	351	31	11.32
A few times	5	356	26	13.69
Every couple of months	10	573	34	16.85
Once or twice a month	20	771	45	17.13
Several times a month	40	431	22	19.59
At least once a week	60	277	11	25.18
Totals	-	2759	169	16.33

Mood was then calculated for each frequency of getting drunk (Table 4). This showed a steady increase in depressive symptoms from the mild depression of the non-drinkers to the severe depression of those who were drunk most frequently. Only a very small number of students (7, 4.1%) registered as being in the "normal mood" range, all others showing up with some level of depression. This is not too surprising given the timing of administration of the questionnaire shortly before their "mock" Leaving Certificate examination. Setting μ as mean mood disturbance and n as the approximate number of times drunk, the graph of μ against n is linear in the range $[0, 10]$, showing a substantial decrease in mood even for getting drunk infrequently. The graph then curves upwards for $n > 10$, and may be approximated by the equation $\mu = n^2/400 + 16$, with the quadratic term suggesting that the more frequently a participant gets drunk the more rapidly his mood will decline. However, this research cannot establish any causal relation between these two variables.

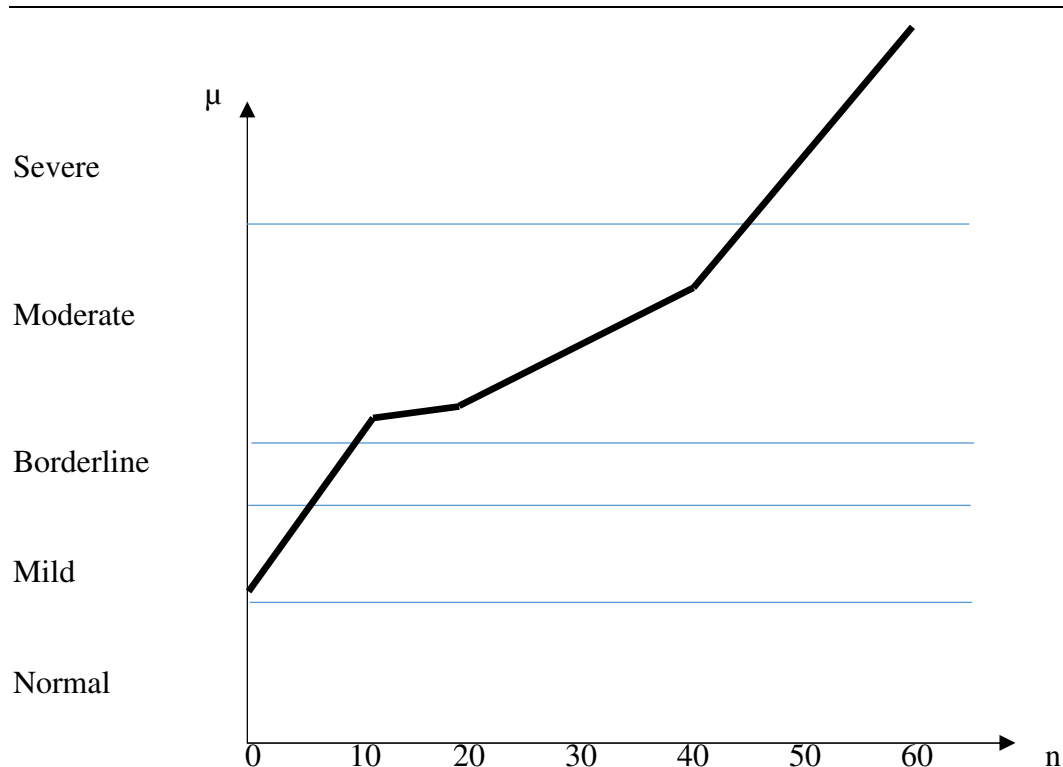


Figure 1: Levels of depression against frequency of getting drunk (n times in previous year)

The means were then calculated for each school separately (Table 5). Each principal allocated a broad socio-economic label to the pupils from his/her school. School 3, with $n = 27$, was borderline for consideration as a representative sample. The significance of the difference between any two means was then calculated.

Table 5: Means and standard deviations for each school separately

School	Socio-economic label	Sex	Number n	Total drink	Frequency of getting drunk	Mood
School 1	Middle class	Co-ed.	60	2.58 (5.22)	1.73 (1.41)	17.92 (7.17)
School 2	Lower middle class	Single sex	82	4.20 (4.80)	2.48 (1.34)	21.52 (7.67)
School 3	Working class	Co-ed.	27	9.67 (9.55)	2.41 (1.39)	18.26 (8.19)
Mean (Standard deviation)	-	-	-	4.50 (6.36)	2.20 (1.41)	19.72 (7.74)

The most striking figure here is the very high per capita consumption of alcohol in the working class school, more than twice that of and significantly different ($p < 0.01$) from either of the other schools (Table 6). Although the sample from that school is small, a χ^2 analysis indicated that this result is significant at the 5% level. Schools 1 and 2 show a

highly significant difference ($p < 0.01$) in frequency of getting drunk, with those from the lower middle class school getting drunk more frequently. For mood, the difference between schools 1 and 2 is also significant at the 1% level, with pupils from the middle class school having the lowest mood disturbance.

Table 6: Significance (p-values) of differences among schools

n/s = not statistically significant

Item	Total drink		Drunkenness		Total mood	
	Sch.2	Sch.3	Sch.2	Sch.3	Sch.2	Sch.3
School 1	0.059	0.002	0.002	0.036	0.004	n/s
School 2		0.004		n/s		0.069

This gives a mixed picture, where each school stands out significantly in one field. The working class pupils have the highest average consumption of alcohol; the lower middle class students (from the only single-sex school) have the highest level of depression recorded; and the middle class students have a significantly lower rate of getting drunk. There were no significant correlations between *Mood* and either involvement in antisocial behaviour or having a hangover. However, the working class school had a weak correlation ($r = 0.16$) for ASB and a moderate correlation ($r = 0.3$) for hangovers.

Forty respondents (23.7%) made some comment at the end of their questionnaire. Five were trivial (e.g. “Hi”), three stated they did not drink (in one case “*anymore*”), and one gave his name. 23 comments referred to alcohol and eight to mood. A majority of the alcohol-related comments (15, 58%) were very positive about drinking, including “*Getting drunk is the only good part of the week.*” A few referred to specific occasions when their consumption of alcohol was greater than normal, such as “*I’m going to drink my body weight in alcohol after the Leaving.*” and “*My liver’s gonna take a beating on Paddy’s Day!*” Others were more defensive, with some transferring responsibility for their drinking: “*Drink is a vital part of our culture*” and “*Alcohol is not the problem. The Leaving Cert is.*” Others claimed to be responsible in their drinking, while simultaneously indicating a lack of accountability: “*I do drink and am more responsible than most adults at drinking. Can’t wait for Easter!.*” Just one comment showed genuine responsibility: “*I haven’t drunk since August as I have a lot of sports and I have a job.*”

The remaining eight alcohol comments were more negative in tone, mainly expressing their concern over their drinking habits. Examples include:

“*I hadn’t realised how much I drank!*”

“*I don’t drink for ages and then I get really drunk.*”

“*I’d prefer not to drink but I don’t know how to stop.*”

One student offered a reason for his drinking: “*I drink to blot out the thoughts in my head.*”

None of the mood comments were positive, though four were only mildly defensive: e.g. “*I’m not depressed. It’s just the Leaving.*” and “*I blame 6th year.*” However, a few more serious comments were included, such as requests for help either because the participant wanted to reduce or cut out his drinking or because the participant’s mood was very low. In a

small number of cases participants asked for help in dealing with sexual or other problems that had developed as a result of their drinking, and in one of these the pupil identified himself and gave his email address. In each of these more serious cases the school principal was informed that there had been some important personal issues raised by their pupils, without identifying individual pupils, so that the school counsellor could address such matters in a general way. However, in each case the school concerned indicated that they did not feel able to raise issues of this type and they chose to ignore the pupils' requests. Thus, it was felt important to include contact details for a number of appropriate support agencies, such as Alcoholics Anonymous, the Samaritans and the Rape Crisis Centre, in the letter of thanks distributed to each participant.

Discussion

A high proportion of these students drink regularly and more than 80% of them had been drunk during the previous year. These figures are higher than the European studies referred to above, and compare unfavourably with the European mean of 47% of male adolescents experiencing at least one drunk episode during the previous year (Hibell and Guttormsson, 2010). The participants described getting drunk in positive terms; the most common pattern was regular binge drinking to excess. There were signs of mood disturbance that correlated positively with rates of drunkenness.

If this is a fair indication of the reality for these students, it shows a worrying picture whereby older schoolboys drink heavily and frequently and often become drunk. From the comments at the end of the questionnaire, some of the participants hadn't realised how much they drank until they had to calculate their totals for the questionnaire. This may well offer a possible approach for this topic with adolescents, by asking them to keep a private record of their drinking habits. As almost one-third of the sample starting drinking by age 13 – some even before 10 – the problem of excess drinking in adolescence may well be rooted in childhood. This suggests targeting a very young age group in the first instance.

Following the pre-trial of the questionnaire, the items dealing with mood were significantly shortened and simplified. The results from this revised section gave very much lower levels of discrimination than in the pre-trial and this requires some investigation. Many participants ticked "Disagree" on each of the 12 statements in Section E (on mood). This may indicate their genuine mood level, or it might suggest some level of denial on their part, or it might be that the repetitiveness of the statements encouraged rapid answering with minimal thought. It is not possible to answer this clearly without further research.

The overall indications of mood were less revealing than had been anticipated from the pre-trial. Nevertheless, a rapid decrease in mood disturbance was evident even for infrequent drinking, and for more frequent bouts of drunkenness mood further decreased according to a quadratic function. This may be useful in any approach to young adult men about drinking: by showing a correlation between drunkenness and mood it might be possible to encourage some to moderate their drinking pattern away from binge drinking. These results show a good fit with other research on depressive symptoms in adolescence (Fergusson *et al.*, 2005).

The extremely high drinking rate in the working class school is consistent with earlier findings whereby such pupils are found to be more likely to engage in practices that could seriously lower their mood (Kerr *et al.*, 2011), although this sample is small. However, their mood disturbance was not significantly different from the other socio-economic groups. This merits some further investigation.

It is not easy to offer a consistent explanation for these mixed but statistically significant results. Further research could be carried out to establish if the drinking rates and mood disturbances recorded here are genuine. It would also be useful to investigate whether, as is suggested here, male pupils in single-sex schools tend to suffer more from reduced mood than their counterparts in coeducational schools.

Given that most of the questionnaire dealt with alcohol, it is hardly surprising that most comments referred to alcohol rather than mood. It is clear that some students enjoy getting drunk and escaping – albeit temporarily – from the pressures of school life. However, are these high alcoholic consumption rates sheer bravado – being able to state their love of alcohol without fear of repercussions – or a genuine reflection of the real situation? Comments made later to teachers and passed back to the researcher support the contention that the written statements were genuine. If so, then at least some pupils were concerned about their drinking habits. These issues have not been addressed here but, with almost 5% of the sample relating matters of concern around their drinking, this merits further investigation.

The defensive comments about mood reflect literature findings that adolescent males tend to proffer excuses for feeling down rather than address any distressing situation (Kerr *et al.*, 2011). Blaming temporary factors is common, and one-tenth of the comments made here blamed the Leaving Certificate Examinations for their low mood, while none blamed alcohol. This issue may also benefit from being discussed at senior cycle in secondary schools.

The more serious comments about mood show that there is a continuing need for personal support of pupils in schools, though asking for help in an anonymous survey may suggest that they do not want it from someone they know well, such as the school counsellor, but might prefer to talk to an independent, confidential person (as in Kerr *et al.*, 2011, for example). The fact that no action was taken in the schools is cause for some concern.

The present research has limitations, including uncertainty arising from measurement of the students' mood. The mood items on the questionnaire could usefully be expanded, asking about any other factors that might cause mood disturbance. Such an investigation might lead to a regression model for mood taking into account the amount of alcohol drunk in regular sessions, frequency of getting very drunk, and any other significant factors identified, which could be very useful in addressing the issue of alcohol abuse among male adolescents.

Another limitation of this survey is the lack of information about when and where the students drank their alcohol – their own homes, friends' homes, in bars or outdoors – and whether they tended to drink alone, in small groups or in larger groups. This information would help give a fuller picture of adolescent drinking habits.

In spite of these limitations the significant correlations above provide evidence to support a positive correlation between both alcohol consumption and frequency of getting drunk and a lowering of mood. Hence, the null hypothesis can be rejected.

Conclusions

The participants in this study, all final year male students in secondary schools in Ireland, drink alcohol frequently and heavily, often becoming drunk. On average they showed moderate levels of depression; this was correlated positively and significantly with both total

consumption of alcohol and frequency of getting drunk, though clearly this does not prove causality. Many participants started drinking at an early age and a large majority of them greatly enjoyed drinking. However, some were concerned by their drinking habits, though only a few expressed concern about their mood, reflecting earlier findings that adolescent males are reluctant to address any mood disorders, tending to offer explanations for them in terms of current events in their lives. The overall level of depression among the participants rose substantially with increased frequency of getting drunk, up to “severe” level for those who binge drank weekly.

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