Alcohol and Mental Health

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There is a close relationship between alcohol problems and mental health. People with mental health problems are at raised risk of alcohol problems and vice versa.

There is thus more than one kind of relationship involved:

- Mental health problems may be a cause of problem drinking
- Problem drinking may be a cause of mental ill-health problems
- There may be a factor in common, in the genes or in the early family environment, which later contributes to both a mental health problem and an alcohol problem
- Some studies suggest that that light to moderate drinking may have some beneficial effects on mental health for some people, although the science basis for this is somewhat weak.
- Sometimes heavy drinkers start to misuse prescribed drugs, or illegal drugs, causing harm to mental health

How frequent is the overlap between Mental Ill Health and Problem Drinking?

American research suggests that overall, the prevalence of alcohol dependence is almost twice as high in those with psychiatric disorders as in the general population. One US study[1] found that 19.9% of the general population had one or more psychiatric disorders, but in those with alcohol abuse or dependence the figure rose to 36.6%

Another US[2] study found that around half of those with a lifetime addictive disorder also had lifetime mental disorders, and vice versa.

Similar findings have been reported for the UK. Less than 1% of the general UK household population report being moderately or severely dependent on alcohol, but this figure rises to 2% for people with any neurotic disorder, 5% among those with a phobia and 6% in those with two or more neurotic disorders.

Conditions in which people may try to use alcohol to cope, with resulting problems include:

- *Depression* –resulting from, for example, bereavement, retirement or arising out of the blue
- *Anxiety* – social anxiety, claustrophobia, agoraphobia.
- *Obsessive-compulsive disorders* –.
- *Manic- depressive illness* – the elation phase is associated with drinking bouts
- *Schizophrenia*

The risk of alcohol problems is also known to be raised in those with a history of sexual abuse in childhood

The condition most clearly associated with alcohol abuse and dependence is *Anti-social personality disorder* (ASPD) - people with ASPD have 21 times the average population risk of experiencing alcohol abuse or dependence. In the UK, drinking at hazardous levels has also been shown to be more likely in those with ASPD. In one survey, 59% of those (men and women combined) with ASPD were classified as hazardous drinkers, compared with 25% of those without.

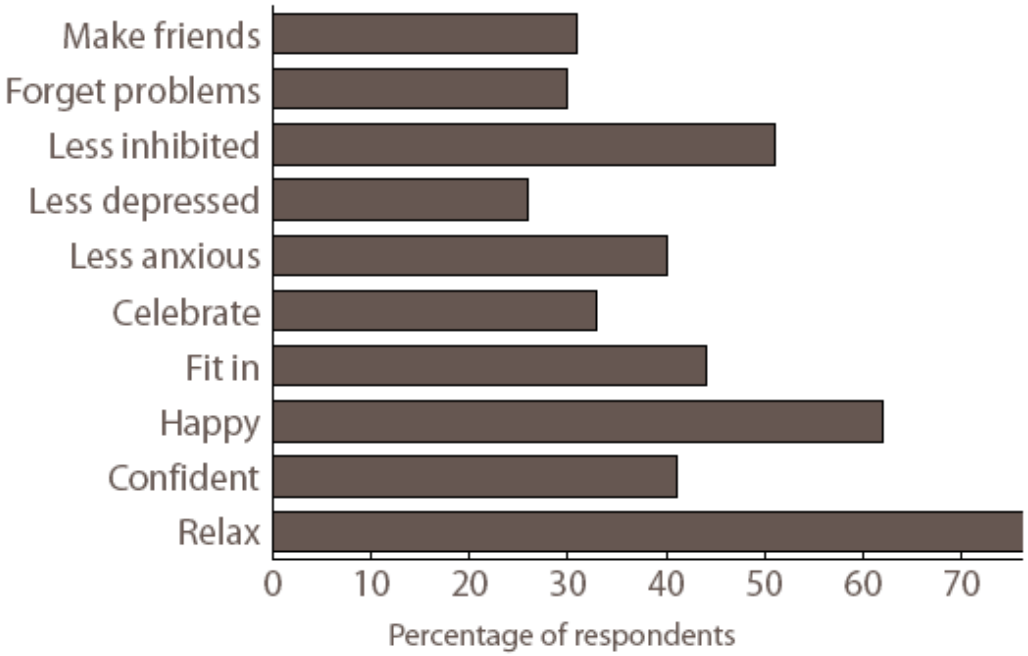
This compares with:

- *Schizophrenia* – 3 times the population average risk of alcohol dependence;
- *Depression and affective disorders* -1.9 times the average population risk of alcohol dependence
- *Anxiety* 1.5 times the average population risk of experiencing alcohol dependence

Alcohol, Anxiety and Depression

Alcohol is the second most widely consumed psychoactive drug in the world, (caffeine comes first) and some of the most frequently cited reasons for drinking involve bringing about a change of mood in order to feel better – drinking 'to relieve stress', cheer oneself up etc Equally, drinkers may complain that alcohol makes them feel depressed or has some other adverse effect on their mental state. Stress has also been identified as a cause of relapse in alcohol dependence.

WHY DO PEOPLE DRINK ALCOHOL?[3]



There is a range of reasons why alcohol could have both positive and negative effects on mental state. These reasons are not restricted to its pharmacological action but also include the ways in which this interacts with other factors such as the pre-existing mood and personality of the drinker; the drinker's beliefs and expectations about the effects of alcohol, and the circumstances in which it is consumed. Further differences can arise from the quantities involved and the pattern of consumption. Small quantities have different effects from large ones; binge drinking can have different effects from the same quantity of alcohol consumed over a longer period; alcohol dependence is often characterised by the vicious circle of short-term psychological benefits from drinking, at the expense of long-term deterioration and increasing depression and sense of hopelessness.

While studies have found that small quantities of alcohol may reduce feelings of tension or being under pressure, alcohol can also, in some individuals, actually induce rather than reduce the body's stress response by stimulating the release of certain hormones.[4]

Alcohol and the Brain

Acute Intoxication

As alcohol has a high initial concentration in the brain, neurological effects are seen almost immediately leading, if enough alcohol is consumed, to all the well-known signs and symptoms of intoxication and the consequent deterioration of behaviour. The effects of alcohol intoxication at various dosage levels are, however, influenced by a range of factors, genetic, psychological, cultural and environmental.[5]

At blood alcohol levels around 50mg% (the UK legal limit for driving is 80mg%), cognitive impairment is normally evident, with adverse effects on learning,

memory and the ability to process complex information. The ability to undertake novel tasks is significantly impaired, the ability to undertake routine, well rehearsed ones less so. Psychomotor performance is also degraded. The higher the blood alcohol level, the greater the impairment. At blood alcohol levels around 300mg%, amnesia for the drinking episode is likely.[5]

Long Term Effects

There is evidence to suggest that regular consumption of alcohol may have either beneficial or harmful effects on brain functioning and on cognitive competence depending on the quantities involved. However, the studies were not wholly consistent in regard to quantity.

One study found that in elderly populations, consumption of 1 to 9 (UK) standard drinks per week may improve cognitive functioning and reduce the risk of dementia, while consuming 21 or more drinks per week may increase the risk of dementia.[6]

A British study found that in middle aged subjects, alcohol consumption was associated with better function regarding some aspects of cognition. Those who drank at least one drink per week were significantly less likely to have poor cognitive function compared with non-drinkers. The beneficial effect extended to those drinking more than 30 drinks per week. The effect was stronger for women than men.[7]

However, previous studies had found that in all populations, consumption of more than 40g alcohol per day, equal to 5 standard UK drinks, is associated with measurable declines in brain functioning and cognitive efficiency, possibly with tissue damage. Such impairment is likely at a consumption level of 84g per day, equal to 10.5 standard UK drinks. [5]

Chronic alcohol dependence is associated with extensive brain damage and cognitive deficits leading in extreme cases to alcoholic dementia, a loss of intellectual functioning combined with amnesia. Alcohol-induced brain damage appears to be partially reversible with abstinence. [5]

Alcohol and Depression

Alcohol consumption may be either a cause or a consequence of depression. In relation to its causal role, some have suggested that alcohol is bi-phasic in its effects, initially producing a sense of euphoria which turns to feelings of depression as the blood alcohol levels falls. Problem drinking and dependence can cause a range of problems such as family conflict and disruption, job loss and financial problems that are likely in themselves to result in increased levels of anxiety and depression. Alcohol dependence is one of the main risk factors for suicide.

However, these strong relationships between drinking, depression and suicide may be restricted to extreme patterns of consumption, which tend to characterise clinical populations, and are much less in evidence in the general population. One Canadian study found no significant relationship between alcohol consumption and depression in a general population sample, apart from binge drinking being associated with raised risk of depression in women.[8]

Benefits for mental health of alcohol consumption

It has been suggested that light to moderate drinking can improve mood and social adjustment and help non-problem drinkers cope with stress or other negative emotional states.

However, the evidence for this is mainly anecdotal. Scientific studies apparently showing alcohol to have mental health benefits have often lacked control groups; failed to take into account other confounding factors such as individuals' sociability and the extent of their supporting social network, or have been unable to eliminate the factor of psychological expectancy, leaving open the possibility that apparent benefits were actually the result of a placebo effect.[9]

There is scant evidence that light to moderate drinking has any beneficial effects in relation to psychiatric disorders. Alcohol dependence delays recovery from co-existing psychiatric conditions.[10]

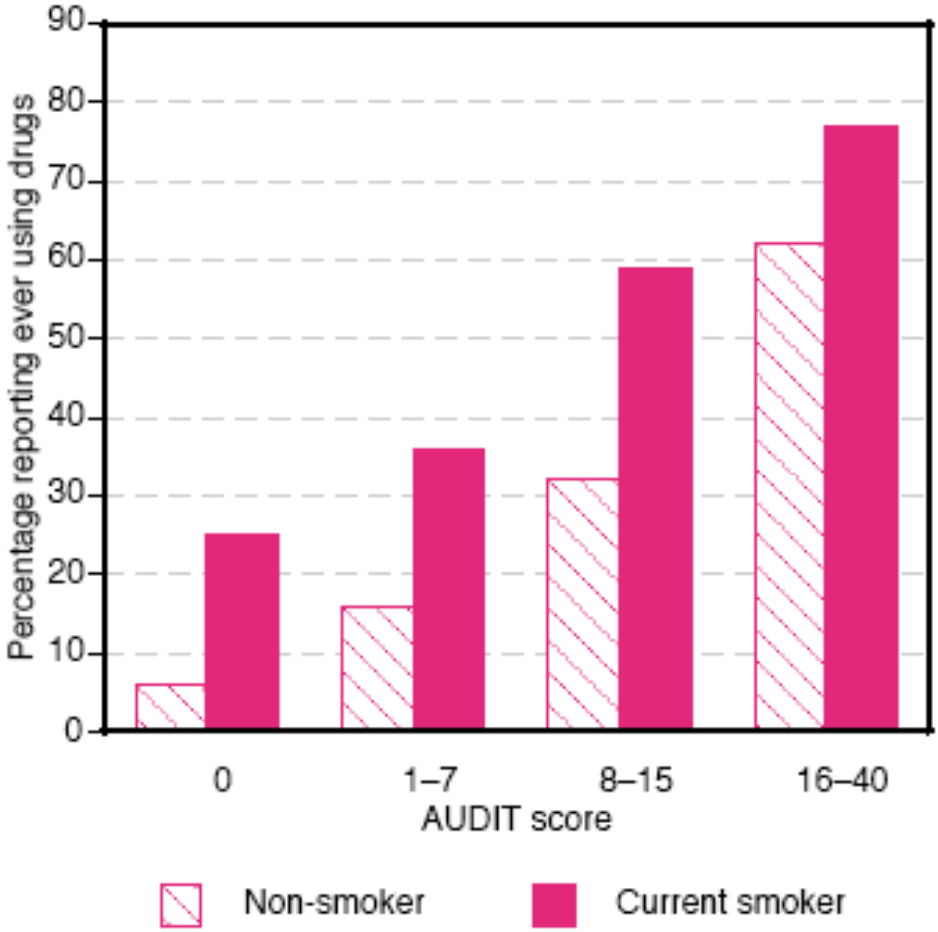
Other Drugs

Drinking alcohol is also closely linked with use of other drugs, legal and illegal.

Smoking, drinking and drug taking often co-exist. Nearly one in four (24%) of smokers state that have used drugs, cannabis being the commonest, in the last year, compared to only one in twenty (5%) of non-smokers.

Only 6% of non-smoking, non-alcohol users report ever trying drugs, whereas 77% of smokers who also misuse alcohol report trying drugs

Percentage reporting ever using drugs by AUDIT score and smoking status[11]



NB A score of 8 or more on AUDIT indicates a probable alcohol problem

Odds ratios for the co-occurrence of substance misuse [11]

	Current smoker	**Hazardous drinker (AUDIT = 8 and over)**	**Dependent on any drug**
	Adjusted odds ratio	**Adjusted odds ratio**	**Adjusted odds ratio**
Smoking status			
Never regular		1.00	1.00
Ex-regular		1.65***	3.06***
Light		2.00***	7.16***
Moderate		2.14***	11.95***
Heavy		2.46***	12.02***
AUDIT score (Hazardous drinking)			
Score: 0-7	1.00		1.00
Score: 8-15	1.70***		1.77***
Score: 16-40	3.57***		5.79***
Drug dependence			
No drug dependence	1.00	1.00	
Any drug dependence	7.01***	2.30***	
Sex			
Female	1.00	1.00	1.00
Male	0.85***	3.26***	2.10***
Age group			
65-74	1.00	1.00	1.00
55-64	1.68***	1.40**	1.12
45-54	1.99***	2.06***	2.85
35-44	2.31***	2.62***	3.96*
25-34	2.66***	3.40***	12.55***
16-24	2.25***	5.29***	31.31***

*=p<0.05; **=p<0.01; ***=p<0.001

The table shows the strong associations between the different forms of substance use and how the odds of being a smoker, a hazardous drinker or a drug user increase whenever one of the others co-exists. For example, heavy smokers have a twelve -fold increase in the odds of being drug dependent and those scoring above 16 on the AUDIT score a six-fold increase. However, age is also a major risk factor for drug dependence, with the youngest group having thirty-fold greater odds than the oldest group.

Institute of Alcohol Studies
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