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REVIEW

Is alcohol more dangerous than heroin? The physical, social and financial costs of alcohol

Geraldine A Lee RGN, BSc, PGDE, MPhil, Lecturer [a,*], Marcus Forsythe BSc, Dip Higher Education, Grad Dip in Alcohol & Other Drugs, Masters of Nursing (Nurse Practitioner) (Manager of Withdrawal Services) [b]

[a] *Alfred/LaTrobe Clinical School of Nursing, Alfred Hospital, Prahran, Melbourne, Victoria 3004, Australia*
[b] *Windana Drug and Alcohol Recovery, 88 Alma Road, St Kilda, Melbourne, Victoria 3182, Australia*

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Abstract
A recent paper claimed in its classification of harmful substances, that alcohol is more dangerous than heroin. This paper aims to weigh up some of the evidence in the literature on the physical, social and financial effects of alcohol and the associated disease burden. We will also explore alcohol within the context of emergency department (ED) presentations.
Reasons for ED attendance can be overtly and directly alcohol related such as alcohol intoxication, assaults, injuries and falls and indirectly such as child neglect, psychological problems and chronic diseases. Alcohol is often viewed as an isolated incident or factor for ED presentations but there are data that refute this perception.
In ED, the priority is to treat the patient and their primary complaint, however it may be appropriate to screen for alcohol use, give advice and potentially offer an intervention to the patient. With the recent UK and Australian guidelines on reducing health risks from drinking alcohol, the ED has the ability to play an active role in reducing the harmful effects of alcohol through screening, advising and undertaking intervention as appropriate. However this cannot be achieved in isolation but within the broader political and health policy framework. There is now a growing body of literature supporting the need to make alcohol less affordable, less easy to buy and reducing alcohol advertising.
Although alcohol is a legal substance, this paper concludes that examining the wider effects in physical, social and financial terms, alcohol is more dangerous than heroin. It has become an endemic problem in society affecting the individual and the whole community.

* Corresponding author. Address: Alfred/LaTrobe Clinical School, 99 Commercial Road, Melbourne 3181, Australia. Tel.: +61 3 8532 1637; fax: +61 3 8532 1100.
E-mail address: gerry_a_lee@yahoo.co.uk (G.A Lee).

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Introduction

The detrimental social effects of alcohol have received much media attention in the past year including a paper published by the Lancet suggesting that alcohol is as harmful as heroin and crack cocaine (Nutt et al., 2010). Categorising alcohol alongside illegal drugs has resulted in the United Kingdom (UK) newspaper headlines such as: ''*Alcohol more harmful than heroin or crack*'' (Boseley, The Guardian Newspaper, 2010). A pertinent aspect of the paper was the examination of alcohol in terms of the effects on the wider community as well as on the individual. With scores of 0—100 (no harm to maximum harm), alcohol scored 72 compared to 55 for heroin and 52 for crack cocaine (Nutt et al., 2010). Although alcohol is a legal substance that is widely available, this fact alone does not mean it is any less dangerous than other illegal drugs, especially in light of its fatal and non-fatal effects.

Methods

Given this controversial paper published by the Lancet, we decided to examine the available statistics on alcohol consumption and associated mortality and morbidity and to examine the literature on the physical, social, financial and public health effects of alcohol focusing on emergency department (ED) visits. The literature accessed included meta-analyses, systematic reviews, government reports and editorials. The rationale for using this type of data was to capture as many facts as possible from a wide range of reputable and international sources. The aim was to put the problems with ED alcohol presentations within a wider public health perspective.

Results

Alcohol consumption statistics

Using data from the Australian National Drug Strategy Household Survey (NDSHS) revealed that one in eight people were drinking at risky/high levels equating to 2 million people in 2004/05 (Australian Bureau of Statistics (ABS), 2006). Risky drinking was defined as five or more standard drinks consumed daily. The data demonstrated that levels of risky drinking were increasing from 8.2% in 1995 to 10.8% in 2001 and 13.4% in 2004—2005 (ABS, 2006). Interestingly the group that showed the largest increase were females (from 6.2% to 11.7%) and in men between 45 and 54 years (18%). Binge drinking was also evident in 40% of males and 31% of females in those aged 14 years and over. Data on Indigenous Australians shows that 16% were drinking at risky levels and in those aged 18—24 years, 20% of males and 14% of females consumed alcohol at risky/high risk levels (ABS, 2006).

A 2008 survey reported that 71% of males and 56% of females in England were drinking alcohol on at least one day in the previous week (The Health and Social Care Information Centre, 2010). An earlier General Household Survey reported two-thirds of adults drinking alcohol on a weekly basis and a further 30% who drink more than the recommended daily amount (Office for National Statistics, 2004). The 2008 survey reported that 33% of men and 16% of women were classified as hazardous drinkers (The Health and Social Care Information Centre, 2010).

From these two countries, it is apparent that a proportion of both males and females indulge in high levels of alcohol consumption with a trend of increasing numbers in the past decade. Similar results from other countries are available in the World Health Organisation (WHO) report (WHO, 2004).

Physical effects

Alcohol has a significant disease burden and is associated with premature death and disability (Rehm et al., 2009). According to the WHO, alcohol was responsible for 1.8 million deaths (3.2% of total) and a loss of 58.3 million (4% of total) of Disability-Adjusted Life Years (DALY) (WHO, 2004). Alcohol is also a significant factor in accidents, violence, suicide and homicide (WHO, 2004).

In Australia, alcohol dependence and harmful use was ranked 17th in the 20 leading causes of burden of disease and injury in 2003 and alcohol was the second biggest cause of drug-related deaths and hospitalisations in Australia (after tobacco) (ABS, 2006). Nearly 32,000 Australians died from alcohol-caused disease and injury between 1992 and 2001 and three quarters of these were male (ABS, 2006). Examining road traffic deaths, 2000 of 7000 deaths were related to alcohol (Ridolfo and Stevenson, 1998). In the UK, a total of 6769 deaths were directly related to alcohol in 2008 compared to 5144 deaths in 2001 (an increase of 24%). The majority of deaths in 2008 were due to alcoholic liver disease ($n = 4400$) (The Health and Social Care Information Centre, 2010).

It is now well established that alcohol has numerous effects on behaviour including cognitive impairment and risk-taking behaviour such as unprotected sex (Davis et al., 2009). Cognitive impairment can have adverse effects on driving performance and consequently alcohol related motor vehicle accidents result. In relation to driving, poor judgement and risk-taking can occur at blood alcohol levels as low as <0.02 g/100 mL s (Ogden and Moskowitz, 2004).

Alcohol has been associated with motor vehicle accidents, violence, suicide and injuries and are often described as motor vehicle and non-motor vehicle alcohol related injuries (Borges et al., 2006; Room et al., 2005; Taylor et al., 2010). The only meta-analyses examining the dose—response of alcohol in motor vehicle and non-motor vehicle injuries, demonstrated a non-linear increase in injury with increasing alcohol consumption (Taylor et al., 2010). For motor vehicle accidents, the odds ratio (OR) increased by 1.24 (95% confidence interval: 1.18—1.31) per 10 g in pure alcohol increasing to 52.0 (95% CI: 34.50—78.28) at 120 g. A similarly large OR was observed for non-motor vehicle injuries with an OR at 140 g of 24.2 (95% CI: 16.2—36.2). The authors concluded that *no* level of consumption was safe for driving and less than 2 drinks should be recommended to reduce the risk of injury. A study in 10 EDs also showed the risk of injury increasing with a single drink OR 1.33 (95% CI: 1.09—5.7) and a 10-fold increase in those who had consumed six or more drinks in the previous 6 h (Borges et al., 2006). The message from these studies is that