



Off Measure: How we underestimate the amount we drink



Alcohol Concern
Making Sense of Alcohol

Alcohol Concern

Alcohol Concern is the national agency on alcohol misuse campaigning for effective alcohol policy and improved services for people whose lives are affected by alcohol-related problems.

This report was written and researched by Mark A Bellis, Karen Hughes, Penny A Cook, Michela Morleo, Centre for Public Health, Liverpool John Moores University, Kingsway House, Hatton Garden, Liverpool, L3 2AJ, UK

Published by Alcohol Concern, 64 Leman Street, London E1 8EU Tel: 020 7264 0510,
Fax: 020 7488 9213, Email: contact@alcoholconcern.org.uk,
Website: www.alcoholconcern.org.uk

Copyright: Alcohol Concern December 2009

All rights reserved. No part of this publication may be produced, stored in a retrieval system, or transmitted by any means without the permission of the publishers and the copyright holders.

Alcohol Concern is a registered charity no. 291705 and a company limited by guarantee registered in London no. 1908221.

Contents Page

Summary.....	2
Introduction.....	3
Calculating the true level of consumption among adult drinkers	3
Accounting for the differences in data	4
Problems in survey design	5
Conclusion	7
References.....	8

Off Measure

Summary

Routine survey measures of alcohol consumption in the UK grossly underestimate actual consumption. A new analysis carried out by Liverpool John Moores University finds that the discrepancy between alcohol surveys calculating consumption and actual alcohol sales equals 430 million units a week. This is the equivalent of a bottle of wine per adult drinker per week going unaccounted for in the UK.

Based on sales data during 2007/08, average alcohol consumption per week across the UK was around 26 units per adult drinker. This does not include any alcohol consumed abroad, personally imported (legally or illegally) or brewed at home. With levels of abstinence having risen considerably in recent years the actual amount of alcohol consumed per drinker may increase even when total alcohol sales remain the same or fall.

There would need to be a reduction of around 184 million litres of alcohol per year in sales (nearly a 1/3 of all current sales based on 2007/08 data) just for the average consumption of female and male drinkers to fall to 14 units and 21 units per week respectively.

Current survey designs to measure alcohol consumption are likely to lead to underestimates in the size of the population being affected by alcohol-related harms. Consequently, this has risks for the urgency of the government's current policy response and the necessary public investment needed to reduce harms.

There is an urgent need for better quality survey data on alcohol consumption patterns, the number of individuals abstaining and the rate of consumption above government guidelines across the UK. Work in other countries has shown that properly structured surveys can more accurately measure the majority of alcohol sold and consumed – the UK needs to learn from the way these surveys are designed.

Introduction

For many countries alcohol represents one of the biggest challenges facing public health and health care systems. Figures for England suggest that in 2006, 3.2% of deaths (16,236) were attributable to alcohol. In 2007/08 annual alcohol-related admissions to hospital exceeded 850,000; up 69% since 2002/03.¹

National surveys suggest that the reported weekly average consumption of 20% of women and 31% of men exceeds 14 units and 21 units respectively* (1 unit=10mls pure alcohol).² However, when non-drinkers (17% women; 11% men: population weighted average based on English,² Scottish,³ Welsh⁴ and Northern Irish⁵ national surveys) are excluded, proportions exceeding weekly safe limits rise to around 24% of women and 35% of men.

High levels of alcohol consumption in the UK have prompted vigorous debate and discussion on the need for public health measures to alter such national drinking habits. Some measures have already been adopted (e.g. websites providing advice and voluntary codes for responsible alcohol retail) but calls for others (e.g. a minimum price for alcohol⁶) have so far been rejected. Debate about how far regulation should go revolves around the scale of damage caused by alcohol, whether a responsibly drinking majority should be “punished” for the behaviour of a few, or simply whether consumption is already decreasing. While national surveys can usefully inform such discussions, there is good reason to believe that they grossly underestimate the scale of the problem and consequently, understate the need for action.

Calculating the true level of consumption among adult drinkers

Calculation of the number of deaths and hospital admissions caused by drinking, social marketing messages about how many people drink responsibly and trend analyses (e.g. to examine if prevention interventions work) all rely, to differing extents, on national survey data. UK surveys typically estimate average weekly consumption using a quantity-frequency method, asking participants to estimate how often they drank different drink

* Maximum recommended alcohol limits of 14 units per week for women and 21 units per week for men have been replaced by daily limits in official guidance on sensible alcohol consumption. However, the evidence for those exceeding such weekly levels suffering increased risks of alcohol-related disease and injury remains (Jones et al 2008). Further, no current and historical measures are available on the proportion of people regularly (most days) exceeding 2/3 units per day for women and 3/4 per day for men. Therefore, analyses of the 14 and 21 units per week measures have been retained in this paper.

types over the last year and how much they usually drink on any one day. The General Household Survey suggests an average UK adult (16 years and over) consumes 13.5 units per week². This figure includes those who abstain from drinking, suggesting average consumption for adult drinkers only is approximately 15.7 units per week; around 345 million litres of pure alcohol each year across the population. However, another measure of alcohol consumption is clearance (i.e. taxation) data, which does not directly measure consumption but represents the amount of alcohol on which taxes have been paid to allow their legal sale. In the year 2007/08, 570 million litres of pure alcohol were taxed.⁷ This equates weekly to 22 units per adult (16 years and over) or around 26 units per drinking adult.

The difference between survey and sales data of 225 million litres per year is equivalent to 430 million units per week; or around 44 million bottles of wine a week (at 13% ABV) - this means just over one bottle per adult drinker per week is unaccounted for between survey data and tax sales data.

Accounting for the differences in data

Taxation figures on alcohol sales include alcohol consumed by children and non-UK residents during visits to the UK, as well as that which is stored, thrown away or released for sale in the UK but subsequently exported. To account for differences, this would have to equal more than half of all alcohol consumed by those 16 years and over as measured through national surveys.

However, estimates of alcohol consumption by those under 16 years are equally problematic. Surveys suggest that 11-15 year olds in the UK consume less than 10 million units of alcohol per week[†]; at face value accounting for less than 2.5% of the missing consumption and even allowing for under-reporting still representing only a tiny proportion.

Any suggestions that the difference between sales and survey consumption are due to non-UK nationals consuming alcohol in the UK are equally problematic. Tourism data show that foreign nationals spent 246 million nights in the UK in 2008.⁸ However, this is far less than the 703 million nights spent abroad by UK residents in the same year and their alcohol consumption abroad is not included in taxation estimates.

[†] Based on figures from *Smoking, drinking and drug use among young people in England in 2008*¹¹

A further addition is alcohol purchased abroad or duty free and imported, legally for personal use or illegally for personal use or sale. Although again poorly measured, limited data previously suggested an average of 1.4 litres of pure alcohol per adult (15 years or over) is imported legally to the UK and 0.3 litres acquired via cross-border smuggling. Together with home produced alcohol, this has been estimated at around two litres of alcohol per person per year; or just under four units per week not accounted for in tax-based estimates (2000).⁹

Problems in survey design

It is relatively straightforward to see how so much alcohol could be consumed without registering in surveys. When recalling consumption, drinkers can ignore occasional (even routine) heavy drinking sessions, underestimate drink sizes and their alcohol content, and exclude holidays at home or abroad, special occasions (e.g. weddings, birthdays) or celebratory times of year (e.g. Christmas) when drinking may increase substantially. Even when recollection is complete, accuracy relies on individuals neither exaggerating nor underestimating consumption. Further, certain heavy drinkers may be underrepresented in surveys either through choice or circumstances that exclude them from sampling (e.g. homelessness).

With better sampling and more specific questions on drinking locations and types of drinks consumed, surveys can produce much better estimates in line with sales data.¹⁰ Ensuring that surveys capture the currently missing alcohol consumption across the UK should be a priority. At the moment across the UK billions of units of alcohol are conveniently overlooked. Unfortunately, our national estimates of alcohol-related ill health are partly derived from survey-based levels of consumption combined with risk formulae (i.e. risk of developing a particular disease from a continued level of alcohol consumption) from published studies.¹²

Methodologies for measuring consumption vary between such studies¹³ and to differing extents some will also underestimate alcohol consumption. However, assuming they provide relatively accurate data on how consumption relates to disease, their use in combination with UK surveys could grossly underestimate the burden alcohol represents to the nation's health.

Reducing this burden urgently requires an accurate understanding of how much alcohol is consumed and by whom. Survey data, which currently only represent around 60% of

sales, are a poor measure of who is consuming how much and how such consumption is changing year on year. Equally, sales data tell us nothing about who is drinking at levels most likely to damage health, and understanding the relationship between consumption and ill health requires good behavioural data.¹²

For example, recent debate has focused on whether alcohol sales data indicate a fall in national alcohol consumption[‡] and whether such a fall should be accompanied by improvements in population health.¹⁴ However, recent years have seen increasing levels of abstinence, meaning that total alcohol sales are now being consumed by a substantially smaller proportion of people. In fact, as Box 1 shows, alcohol sales can conceivably fall while the amount each drinker consumes actually increases.

Box 1. The importance of abstinence in interpreting alcohol sales data

Levels of abstinence increased from around 9.5% in 1992/93 to 14% when last measured in 2006 (by the General Household Survey). The 1992/93 annual alcohol consumption per person ≥ 16 years (by taxation) was 9.45 litres rising to 11.39 in 2006/07; a rise of 1.94 litres or 20.5%. However, after accounting for changes in abstinence, consumption per drinker actually increased by approximately 27%; substantially more than suggested by taxation data alone. In fact, consumption would have had to fall by around 0.45 litres/adult per year between 1992/93 and 2006/07 just for average consumption per drinker to have remained the same. The reasons for increasing levels of abstinence are not well studied but may include changes in the demographic (e.g. age, ethnic) profile of the UK.¹⁶

[‡] At the point of publication the latest clearance (taxation) data published were 2007/08, showing a rise in alcohol taxed since 2006/07. However, the British Beer and Pub Association¹⁵, analysing calendar year estimates, suggest a fall in sales between 2007 and 2008 from 9.2 to 8.9 litres of alcohol/person/year. After correcting for abstainers this would mean the average drinker (≥ 16 years) consumes around 24.5 units/week.

Conclusion

Without better intelligence on the actual patterns of alcohol consumption across the UK our efforts to change a damaging drinking culture are likely to be misdirected and policy decisions watered down along with our measures of the scale of the problem. While accurate measures of drinking behaviours are not available, measuring progress in tackling rising consumption and resultant harms will remain challenging. However, even for every drinker in the UK to consume 14 units (females) and 21 units (males) per week there would need to be a reduction of around 184 million litres of alcohol per year in sales (2007/08 base) or **nearly one third** of all alcohol currently sold. This is something unlikely to be popular with either those selling alcohol or collecting tax (considering this could equate to a fall of £4.7 billion in tax revenue).

To discuss alcohol as a nation we need a measure of our national consumption and a target for what we consider is reasonable. A reduction in annual alcohol sales of 184 million litres would be consistent, for example, with an average level of consumption which could be considered safer[§]. For a country that aspires to having a safe, sensible and social drinking culture, developing and measuring real progress towards such a target would be preferable to merely relying on survey data or debating relatively small changes in alcohol sales, at least until we can measure alcohol consumption more accurately.

[§] i.e. just within the range associated with some, but not higher levels, of alcohol related harms

References

1. North West Public Health Observatory. *Local alcohol profiles for England*. 2009. www.nwph.net/alcohol/lape.
2. Goddard E (2008) *Smoking and drinking among adults, 2006*. Newport, Office for National Statistics.
3. Bromley C, Corbett J, Erens B, Moody A. (2008) *Scottish Health Survey: revised alcohol consumption estimates*. Edinburgh, Scottish Government.
4. Dolman R, Kingdon A, Roberts C. (2008) *Welsh Health Survey 2007*. Cardiff, Welsh Assembly Government.
5. Northern Ireland Statistics and Research Agency (2007) *Northern Ireland Health and Social Wellbeing Survey 2005/6*. Belfast, Northern Ireland Statistics and Research Agency.
6. McKee M, Belcher P, Hervey T. (2009) *Reducing harm from alcohol*, BMJ, 338:784-785.
7. HM Revenue and Customs (2008). *Alcohol factsheet 2008*. www.uktradeinfo.com/index.cfm?task=factalcohol.
8. Office for National Statistics (2009) *Travel trends 2008*, Newport, Office for National Statistics.
9. Leifman H. (2001) *Estimations of unrecorded alcohol consumption levels and trends in 14 European countries*, Nordisk Alkohol & Nartkotikatidskrift (*English Supplement*), 18:54-69.
10. Casswell S, Huckle T, Pledger M. (2002) *Survey data need not underestimate alcohol consumption*, Alcoholism: Clinical and Experimental Research, 26:1561-1567.
11. Fuller E (ed). (2009) *Smoking, drinking and drug use among young people in England in 2008*, London, National Centre for Social Research.
12. Jones L, Bellis MA, Dedman D, Sumnall H, Tocque K. (2008) *Alcohol-attributable fractions for England: alcohol-attributable mortality and hospital admissions*. Liverpool, Centre for Public Health, Liverpool John Moores University.
13. Corrao G, Bagnardi V, Zambon A, Aricò S. (1999) *Exploring the dose-response relationship between alcohol consumption and the risk of several alcohol-related conditions: a meta-analysis*, Addiction, 94:1551-1573.
14. British Beer and Pub Association. *Huge fall in alcohol consumption in first six months of 2009* available from: http://www.beerandpub.com/newsList_detail.aspx?newsId=301. [Accessed 12/11/2009]
15. Tighe A, Sheen D. (2009) *Statistical handbook 2009*, London, British Beer and Pub Association.
16. Office for National Statistics (2009), *National population projections, 2008-based*, Newport: Office for National Statistics, 2009.

Off Measure:

How we under-estimate the amount we drink

This analysis carried out by Liverpool John Moores University finds that the discrepancy between alcohol surveys calculating consumption and actual alcohol sales equals 430 million units a week. This is the equivalent of a bottle of wine per adult drinker per week going unaccounted for in the UK.

