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The cost of workplace hangovers and
intoxication to the UK economy



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Contents

Summary	5
Introduction	6
Previous research	8
Methods	10
Results	14
Discussion	20
Conclusion	22
Appendix A: Survey questionnaire	23
Appendix B: Survey sample demographics	25

Summary

- Alcohol-related presenteeism occurs when people are less productive than usual at work as a result of their drinking. This is often due to working while intoxicated or hungover
- Though alcohol-related presenteeism is believed to be a significant drag on the British economy, there is a lack of reliable evidence on the issue, and presenteeism is not included in the UK Government's estimate of the economic cost of alcohol
- We surveyed a nationally representative sample of 3,400 British workers about how their work had been affected both by their own drinking and the drinking of others
- We found that 42% had ever gone to work hungover or under the influence of alcohol, and 9% had done so in the last six months
- On average, these workers rated their performance at work to be 39% less effective than usual
- This implies that people working whilst hungover or under the influence of alcohol costs the UK economy between £1.2 billion and £1.4 billion a year

Introduction

It is widely recognised that alcohol consumption has consequences far beyond the health of the individual drinker. It affects their families, friends, colleagues and wider society, and has an impact on crime, public services and the economy.¹ Yet some of these ‘ripple effects’ have received more attention than others. This report tries to improve our understanding of the neglected phenomenon of alcohol-related ‘presenteeism’ – when a person performs less well at work because of their drinking, most typically because they are hungover or intoxicated.

There are four ways in which alcohol consumption can negatively affect the economy:²

- *Premature mortality* due to alcohol-related accidents and illness, which reduces the size of the labour force
- *Higher unemployment* as heavy drinkers find it harder to find and/or stay in work
- *Absenteeism*: heavier drinkers tend to miss more days of work
- *Presenteeism*: workers’ productivity may be impaired by their drinking even if they make it into work

In discussing alcohol-related presenteeism, we can distinguish two related and overlapping, but distinct, phenomena. The first is the cumulative long-term effect of persistent alcohol consumption on the heaviest drinkers. The second is the short-term effect of drinking relatively recently before or during work, resulting in intoxication or hangovers. Our focus is the second.

Presenteeism is believed to be no less significant in its economic impact than the other three alcohol-related burdens. Indeed, an expert scientific group convened by the European Commission’s Alcohol and Health Forum (EAHF) claimed in a 2011 report that ‘presenteeism is more important for lost productivity than absenteeism’,³ a conclusion supported by studies in several areas of substance misuse and health.⁴

However, the available evidence on presenteeism due to alcohol consumption is limited. The EAHF also suggested that ‘greater investment needs to be made in measuring and costing presenteeism’.⁵ The UK Government’s official estimate of the cost of alcohol to UK society excludes presenteeism altogether because of a perceived lack of robust evidence on the impact of alcohol on workplace efficiency.⁶ The Scottish Government, by contrast, estimated the annual cost of presenteeism to the Scottish economy to be £185 million in 2007, slightly less than the cost of absenteeism (£192 million). However, this estimate is based on a 2004 survey produced by the employment agency Reed, whose methodology is unclear.⁷

In this report, we provide a more up-to-date and transparent estimate of the prevalence and cost of people working through hangovers and intoxication in the UK. We believe this is necessary for two reasons. First, it provides us with a better sense of the scale of the issue, and how it compares to the other costs of alcohol. This is important for informing national policy priorities, but also for employers to better understand where to focus workplace prevention initiatives. Second, it contributes to improving our estimates of the overall costs of alcohol to UK society, which is important for judging the relative priority

1 Gell, L. et al (2015), *Alcohol’s harm to others*. London: Institute of Alcohol Studies; Laslett, A-M. et al (2010), *The Range and Magnitude of Alcohol’s Harm to Others*. Fitzroy, Victoria: AER Centre for Alcohol Policy Research, Turning Point Alcohol and Drug Centre, Eastern Health.

2 Bhattacharya, A. (2017), *Splitting the Bill: Alcohol’s Impact on the Economy*. London: Institute of Alcohol Studies.

3 Science Group of the European Alcohol and Health Forum (2011), *Alcohol, Work and Productivity*, p. 9.

4 Single, E. et al (2003), *International guidelines for estimating the costs of substance abuse*. Geneva: World Health Organization, p. 39.

5 Science Group of the European Alcohol and Health Forum, op. cit., p. 37.

6 Cabinet Office (2003), *Alcohol misuse: How much does it cost?*, pp. 35-6.

7 York Health Economics Consortium, University of York (2010), *The Societal Cost of Alcohol Misuse in Scotland for 2007*. Edinburgh: Scottish Government Social Research, p. 59.

of addressing alcohol compared to other issues, and evaluating the appropriate level of tax on alcohol.⁸

Part of the reason that there is so little research into the impact of alcohol-related presenteeism is because the causal impact on productivity is so difficult to measure accurately. Our approach to the problem is relatively straightforward – we simply ask workers directly about the impact of alcohol on their work in a large nationally representative survey, in the expectation that they are the best judges of their own performance. At the same time, we recognise the limitations of self-reported data and productivity measures, and so we see our estimates as a starting point to encourage future research, rather than the final word. We believe they provide the most reliable data to date on presenteeism in the UK, but they are there to be improved upon.

8 Bhattacharya, A. (2016), Which cost of alcohol? What should we compare it against?, *Addiction* 112:4, pp. 559-65.

Previous research

A number of studies (though not all)⁹ indicate that drinking can impair people's performance at work – unsurprising, given that alcohol has a negative effect on cognitive and motor skills long after it has been consumed.¹⁰ Heavier drinkers tend to report lower productivity, lower quality work and are more likely to get into arguments or accidents.¹¹ There is less reliable evidence, however, about how widespread such issues are, and particularly the size and cost of their impact on the economy. Academic studies have found that in a 12-month period, 10% of Americans report going to work hungover or under the influence of alcohol,¹² and that 6% of Australians admit to working under the influence of alcohol.¹³

Figure 1: Previous UK surveys on working with hangovers

Year	Commissioned by	Survey company	Sample	Estimated prevalence		
				Ever worked hungover	Regularly worked hungover	Daily hangovers
2004	Reed ¹⁴		8,400		Average 2.5 days a year	
2006	PruHealth ¹⁵	YouGov	1,134		17% once a month	200,000
2008	Norwich Union ¹⁶	ICM	1,000	32%	c 10% once a month c 5% once a week	
2010	Drinkaware ¹⁷		1,000		c 10% twice a week	520,000
2016	Willis PMI ¹⁸		1,197	28%	20% 'occasionally', 8% 'regularly'	

UK evidence has tended to come from non-academic surveys, typically in the form of press releases with limited information on the methods used and specific questions asked. Figure 1 summarises their key findings. As noted above, the Scottish Government's estimate of the costs of presenteeism is based on a 2004 Reed survey which found that on average, British workers spend 2.5 days a year hungover at work.¹⁴ Most recently, a 2016 survey by Willis PMI found that 28% of British workers 'occasionally' or 'regularly' work hungover, while 11% of men and 4% of women reported doing so regularly.¹⁵ These figures are slightly lower than previous surveys. In 2008, a Norwich Union survey found that 32% of workers had been to work hungover, a tenth did so every month and one in twenty every week.¹⁶ A 2006 PruHealth poll reported that 17% go to work hungover at least once a month.¹⁷ A 2010 Drinkaware survey produced a relatively high figure, with almost one in 10 workers claiming to go to work hungover at least twice a week.¹⁸

- 9 Blum, T.C. et al (1993), Alcohol consumption and work performance, *Journal of Studies on Alcohol* 54:1, pp. 61-70.
- 10 Gunn, C. et al (2018), A systematic review of the next-day effects of heavy alcohol consumption on cognitive performance, *Addiction* 113:12, pp. 2,182-93.
- 11 Ames, G.M. et al (1997), The relationship of drinking and hangovers to workplace problems: an empirical study, *Journal of Studies on Alcohol* 58:1, pp37-47; Holden, L et al (2011), Health-related productivity losses increase when the health condition is co-morbid with psychological distress: findings from a large cross-sectional sample of working Australians, *BMC Public Health* 11, pp. 417-426; Mangione, T. et al (1999), Employee Drinking Practices and Work Performance, *Journal of Studies on Alcohol* 60:2, pp. 261-70.
- 12 Frone, M.R. (2006), Prevalence and distribution of alcohol use and impairment in the workplace: a U.S. national survey, *Journal of Studies on Alcohol* 67:1, pp. 147-56.
- 13 Pidd, K. et al (2011), Intoxicated workers: findings from a national Australian survey, *Addiction* 106:9, pp. 1,623-33.
- 14 BBC News (2004), Hangovers cost UK £2.8bn annually, *BBC News* (23 August), Available: <http://news.bbc.co.uk/1/hi/business/3588632.stm> [Accessed 12 April 2019].
- 15 Willis PMI Group (2016), What's in it for me...? Attitudes of UK employees towards employee benefits.
- 16 Norwich Union Healthcare (2008), UK employees admit that regular drinking affects their jobs. Available from: <https://www.aviva.com/newsroom/news-releases/2008/05/uk-employees-admit-that-regular-drinking-affects-their-jobs-4048/>. [Accessed 15 March 2019].
- 17 Metro (2006), 200,000 Brits go to work hungover every day (29 November). Available from: <https://metro.co.uk/2006/11/29/200-000-brits-go-to-work-hungover-every-day-425026/>. [Accessed 15 March 2019].
- 18 Gabbatt, A. (2010), Hung over at work? You're far from alone, *Guardian* (26 May), Available from: <https://www.theguardian.com/uk/2010/may/26/hangover-hung-over-work-drinkaware>. [Accessed 15 March 2019].

Other research has focused on employers. A 2007 project carried out by the Centre for Public Health at Liverpool John Moores University on behalf of the workplace health and safety consultancy Health@Work surveyed 300 businesses in Liverpool.¹⁹ It found that one in three companies in the city believe that they are affected by alcohol, and 87% feel that this influence is negative. The study also included a very small survey of 62 employees, of whom 19% reported coming to work with a hangover in the past two weeks.

The impact of presenteeism appears to vary between industries. The Centre for Public Health study found that in Liverpool at least, businesses in leisure and hospitality were most likely to report alcohol having an effect on their workforce, though a majority believed the effects to be positive (for example, in terms of relaxing and building relationships).²⁰ Indeed, surveys of workers in the US and Australia, and occupational physicians in Belgium, have all found that hospitality is among the leading industries to be affected by alcohol.²¹ By contrast, in the Liverpool study, education employers were least likely to report any effect of alcohol.²²

Some studies have attempted to quantify the negative effect of presenteeism on productivity, which is necessary for calculating the cost to employers and the economy. The Scottish Government's estimate is based on a 27% reduction in efficiency, which appears to come from the Reed survey, though exactly how this was arrived at is unclear.²³ An academic survey of CEOs and human resources managers in 216 Belgian companies reported a median estimate of 30% lower productivity among 'alcoholics'.²⁴ A 1970 US study based on 'expert opinion' estimated that those classified as 'alcohol abusers' were 25% less productive than other employees, a figure used in a number of subsequent studies.²⁵

19 Harkins, C. et al (2008), *Alcohol in Business and Commerce Survey: Workplace Alcohol Questionnaire – 2007*. Liverpool: Centre for Public Health, health@work and Liverpool NHS Primary Care Trust.

20 Harkins et al, op. cit.

21 Tecco, J. et al (2013), The cost of alcohol in the workplace in Belgium, *Psychiatria Danubina* 25 supp2, pp118-23; Frone, op. cit; Pidd et al, op. cit.

22 Harkins et al, op. cit.

23 York Health Economics Consortium, op. cit., p. 59.

24 Tecco et al, op. cit.

25 Jones, S. et al, The economic costs of alcohol-related absenteeism and reduced productivity among the working population of New Zealand, *Addiction* 90, pp. 1,455-61; Thavorncharoensap, M. et al (2010), The economic costs of alcohol consumption in Thailand, 2006, *BMC Public Health* 10: 323.

Methods

Research design

We set out to answer three research questions:

1. How prevalent is working while hungover or intoxicated in the UK?
2. How does this vary between different sectors of the economy?
3. What is the cost to the UK economy of people working while hungover or intoxicated?

This entails three steps: first, identifying people who work while hungover or intoxicated and how frequently they do so; second, evaluating the impact on their productivity; third, estimating the economic cost of this lost productivity.

At present, there is no objective way of determining whether a person is hungover.²⁶ For example, exhaled alcohol breath tests would be misleading because people typically experience hangovers after alcohol has left their bloodstream.²⁷ There is little alternative, therefore, to relying on workers' own reports, despite the obvious concern that some people may not accurately remember or may be reluctant to admit to being affected by their drinking. Relying on self-reported data is inevitably a common feature of much alcohol research.²⁸

Estimating how working while hungover or intoxicated affects productivity is even tougher. In the modern economy, there are relatively few jobs where we can clearly observe and value a particular individual's output. Objective performance metrics may be available in particular workplaces or industries. For example, studies based in call centres have measured how quickly employees dealt with calls.²⁹ However, such metrics will be inappropriate for studies that wish to cover all sectors of the economy.³⁰ Again, we have to rely on subjective measures of productivity.

Survey instrument

In recent years, researchers have developed and validated a number of instruments for measuring presenteeism (not specifically due to alcohol, but as a consequence of various impairments). One approach is to ask workers to rate how their health problem affects their ability to perform particular common tasks – for example, heavy lifting, reading or typing. Yet this approach relies on researchers' understanding of which tasks are most important to workers' productivity. Moreover, it is extremely difficult to combine this data into a single measure of work performance, valid across occupations – this would require differential weightings for different roles, for example to account for the fact that heavy lifting is more important to manual labourers than office workers.³¹

The more common approach is to ask workers to provide a single global rating of their overall work performance, typically on a numerical scale (eg out of 10). The implicit assumption is that workers are better placed than researchers to understand how particular impairments affect their output. In fact, self-reported performance ratings tend to be positively correlated with other measures. For example, they have been found to be a reasonably good predictor of supervisor ratings of customer

26 Mackus, M. et al (2017), Biomarkers of the alcohol hangover state: Ethyl glucuronide (EtG) and ethyl sulfate (EtS), *Human Psychopharmacology: Clinical and Experimental* 32:5, e2624.

27 Stephens, R. et al (2014), A critical analysis of alcohol hangover research methodology for surveys or studies of effects on cognition, *Psychopharmacology* 231:11, pp. 2,223-2,236.

28 Del Boca, F.K. & Darkes, J. (2009), The validity of self-reports of alcohol consumption: state of the science and challenges for research, *Addiction* 98:s2, pp. 1-12.

29 Lofland, J.H. et al (2004), A review of Health-Related Workplace Productivity Loss Instruments, *Pharmacoeconomics* 22:3, pp. 165-84.

30 Kessler, R.C. et al (2004), Using the World Health Organization Health and Work Performance Questionnaire (HPQ) to Evaluate the Indirect Workplace Costs of Illness, *Journal of Occupational and Environmental Medicine* 46:6supp, pp. S23-S37.

31 Ibid.

service representatives, based on the number of cases dealt with as well as audit and assessment of recorded calls.³²

Self-reported performance measures need to be benchmarked against some standard of normal functioning. This can be done in various ways.³³ The simplest approach is to assume that normal functioning is 10/10, so if a person reports their performance as 7 when they are hungover this means they are 30% less effective than normal. Of course, in reality people do not perform perfectly all the time – 100% efficiency may be the exception rather than the norm. A second approach is to compare a person's reported performance to average performance among comparable workers. For example, if a person says their performance is 6/10 when hungover, and the average is 8/10, this means their performance is 25% worse than the typical level. The problem with this approach is that a person's performance rating may be higher or lower than average when hungover because they perceive themselves to be generally better or worse than average on a normal day, regardless of whether they are hungover. Moreover, these average ratings may be less meaningful across multiple occupations and sectors, where workers may have quite different perceptions of their effectiveness.

The approach we have used for this study is to ask people to rate their performance while hungover relative to their own typical performance. This can be done using two questions, asking first about usual performance, and then about performance while afflicted. However, for concision, we have chosen to combine these into a single question:

Please rate how well you performed your job on the days you went to work even though you were hungover/under the influence of alcohol (1 indicates a much worse performance than usual and 10 that your work was not affected).

This question wording is adapted from the Health and Labour Questionnaire (HLQ), developed by the Institute for Medical Technology Assessment at Erasmus University.³⁴ This is an established recognised tool for estimating the impact of health conditions on presenteeism.³⁵

Immediately prior to this self-rating question, we included a memory priming task for survey respondents (see appendix A, question 5). This requires respondents to reflect concretely on different ways in which they were affected by being hungover or under the influence of alcohol at work. We included this question because methodological research suggests that forcing respondents to consider specific aspects of their performance improves the accuracy of more abstract global ratings.³⁶

Survey fieldwork

Appendix A provides the full survey questionnaire. We commissioned Populus Data Solutions to include these questions across three waves of their online omnibus surveys in March 2019. These omnibus surveys contain questions about a range of different issues (essentially several combined mini-surveys for different clients) and are sent to a national panel of around 2,000 respondents. However, since our survey was targeted only at people in employment (54% of the panel), our total sample across the three waves was 3,399. Questions about the frequency and impact of working

32 Kessler, R.C. et al (2003), The World Health Organization Health and Work Performance Questionnaire (HPQ), *Journal of Occupational and Environmental Medicine* 45:2, pp. 156-74; see also Prasad, M. et al (2004), A review of Self-report Instruments Measuring Health-Related Work Productivity: A Patient-Reported Outcomes Perspective, *Pharmacoeconomics* 22:4, pp. 225-44; Lofland et al, op. cit.

33 Kessler, R. et al, Content and scoring rules for the WHO HPQ absenteeism and presenteeism questions. Available from: <<https://www.hcp.med.harvard.edu/hpq/ftpd/absenteeism%20presenteeism%20scoring%20050107.pdf>>. [Accessed 12 April 2019].

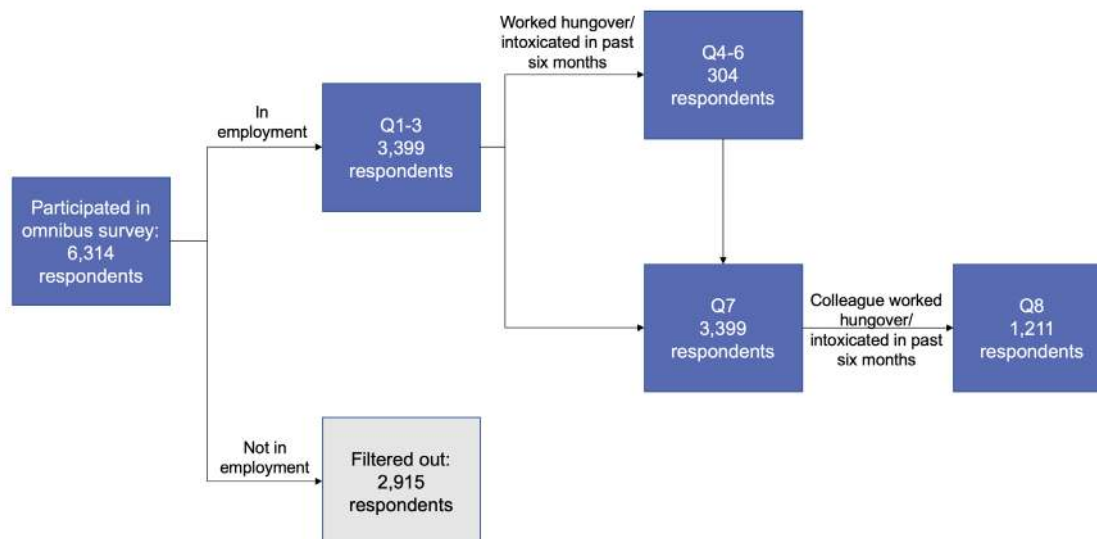
34 IMTA Erasmus University Rotterdam, Shift From – Health and Labour Questionnaire SF HLQ. Available from: <http://oml.eular.org/sysModules/obxOml/docs/ID_83/HLQ_SF_2010.pdf>. [Accessed 12 April 2019].

35 Lofland et al, op. cit.; Prasad et al, op. cit.

36 Kessler et al (2004), op. cit.

while hungover or intoxicated were asked only to those respondents that had reported going to work hungover or intoxicated in the past six months. The sample for these questions was 304. Figure 2 shows the routing for the survey.

Figure 2: Survey routing



We focused on a six-month period, as this is long enough to capture responses from people whose work is impaired relatively infrequently, but is a short enough period for respondents be able to recall.³⁷ As the fieldwork for the survey took place in March, it is important to note that the six-month reporting period covers both Christmas (usually a time of heavy drinking) and January and February (when people are most likely to limit drinking).

To ensure a nationally representative sample, responses were weighted to match the National Readership Survey, according to region, gender, age, social grade, housing tenure, working status, car ownership and whether the respondent had taken a foreign holiday in the past three years. Respondents’ reported individual income in our survey was compared with their reported household income in a previous Populus Data Solutions survey, and those with implausibly high (over 250% of household income) or implausibly low (less than 10% of household income or less than £5 per hour) incomes were excluded from the analysis.

The full sample characteristics are reported in appendix B. The representation of different industries is broadly in line with national statistics. In our weighted sample, 13% of respondents work in health and social care and 10% in education, which is identical to the proportions working in those industries in the Office for National Statistics’ Labour Force Survey (LFS). However, compared to the LFS, we have a slightly higher share of transport and storage (6% vs 5%) and lower share of manufacturing (7% vs 9%) workers.³⁸

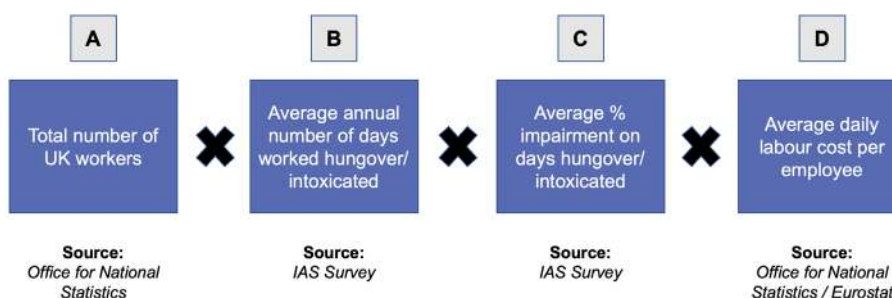
37 Frone, op. cit.

38 Office for National Statistics (2018), EMP13: Employment by Industry. Available from: <<http://bit.ly/onsemp13>>. [Accessed December 2018].

Calculating the economic cost of reduced productivity

Using the data from our survey, we use a standard approach to estimating the annual cost to the UK economy of people working hungover or under the influence of alcohol.³⁹ To calculate lost output, we multiply the average number of days that each worker was hungover or under the influence at work by the average labour costs of employing them for a day and then by the average impairment to their productivity. This is then multiplied by the total number of people in employment. Figure 3 illustrates the calculation and data sources.

Figure 3: Formula for calculating economic cost



In this calculation, we have only accounted for the impact on the intoxicated/hungover worker themselves, though as we outline below, there may also be a negative effect on the productivity of their co-workers.

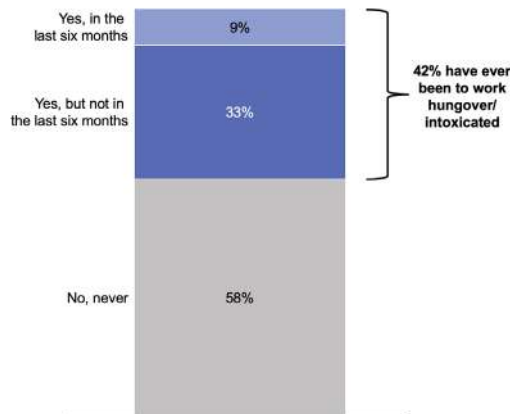
39 Single et al, op. cit. p. 40; York Health Economics Consortium, op. cit.; Schultz, A.B. et al (2009), The Cost and Impact of Health Conditions on Presenteeism to Employers: A review of the Literature, *Pharmacoeconomics* 27:5, pp. 365-78.

Results

Survey results

Overall, we found that 42% of British workers had ever been to work hungover or under the influence of alcohol, with 9% having done so in the past six months (figure 4). 36% of respondents had been in a situation in the past six months where they suspected one or more of their colleagues were hungover or under the influence.

Figure 4: Have you ever been to work hungover or under the influence of alcohol?



Of those that have been hungover or under the influence of alcohol in the past six months, more than half have only done so once or twice, and 13% have done so more than once a month, as figure 5 shows.

Figure 5: Thinking about the past six months, how many times have you gone to work hungover or under the influence of alcohol?

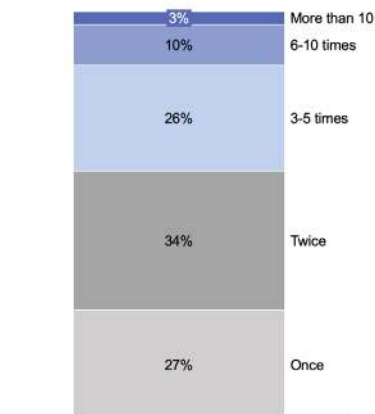


Figure 6 shows various ways in which respondents were affected by their own or a colleague’s intoxication at work. 58% reported being less productive or effective, 20% more stressed and 6% worked longer hours as a result of their own drinking. However, people working hungover or under the influence appear to underestimate the impact on their team members: 7% believed their team was less productive and effective as a result of their own drinking, as compared with 28% who felt a negative effect as a result of somebody else’s drinking. 7% thought their own drinking had negatively affected morale, as compared with 18% for another’s drinking.

Figure 6: Impact of respondent's/colleague's working hungover or intoxicated⁴⁰

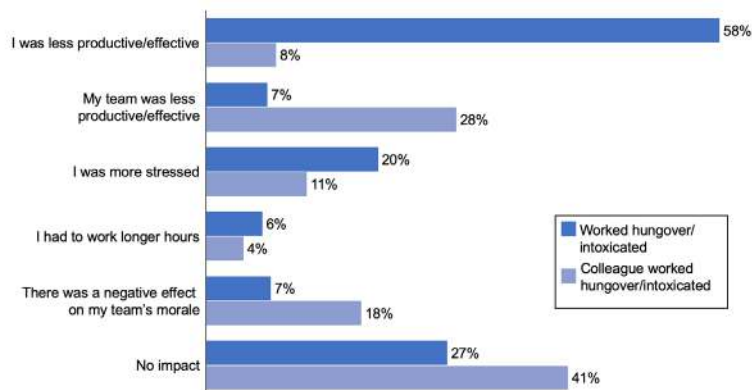


Figure 7 reflects respondents' overall assessment of how working hungover or intoxicated affected their performance. Only 12% believed it had no impact on their level of work (in contrast to the 27% in the slightly different question in figure 6). The median rating was 6, and the mean was 6.1 (both unweighted and weighted by number of hangovers), where 10 represents usual performance level. This implies that workers believe themselves to be 39% less productive when working with a hangover or under the influence of alcohol.

Figure 7: Please rate how well you performed your job on the days you went to work even though you were hungover/under the influence of alcohol (1 indicates a much worse performance than usual and 10 that your work was not affected)

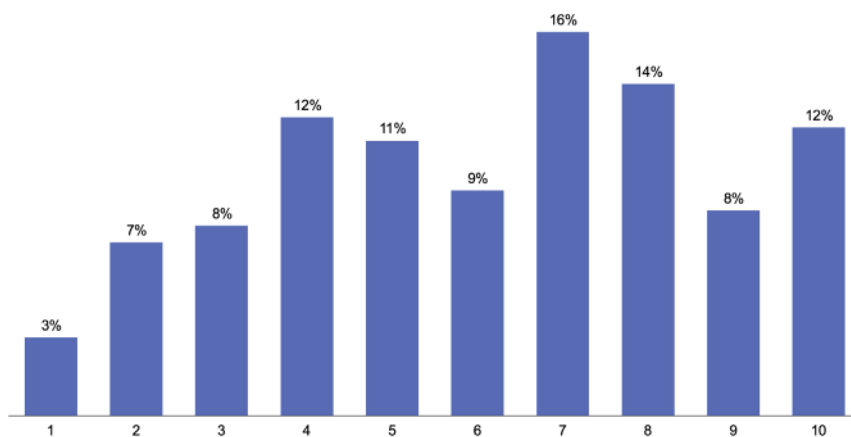
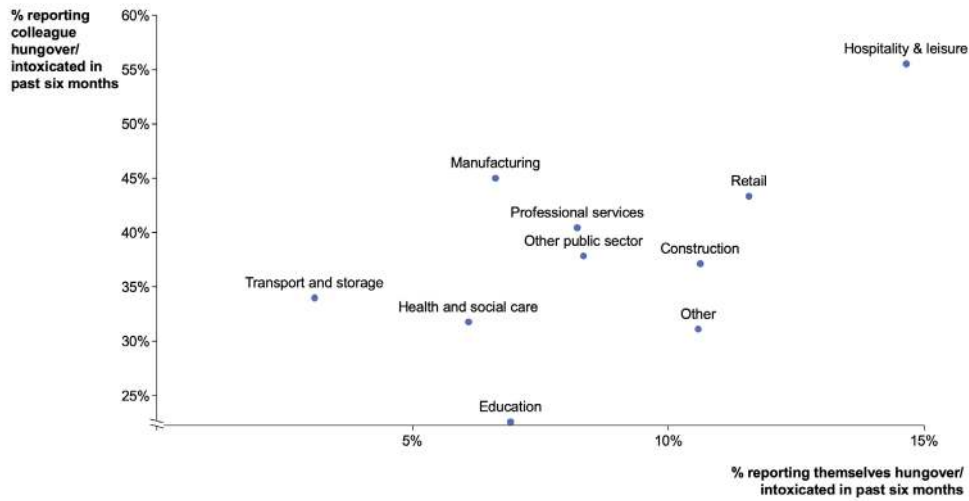


Figure 8 shows the proportion of respondents in each industry reporting that either they or a colleague had worked hungover or under the influence in the past six months.

40 'Now think back to last time you went to work with a hangover/under the influence of alcohol. What was the impact on your work (Tick all that apply)' / 'What was the impact on you of your colleague being hungover or under the influence of alcohol? (Tick all that apply)'.

Figure 8: Reported prevalence of working hungover/intoxicated by industry



The issue is most common in hospitality and leisure, where 52% of workers have ever been to work hungover or under the influence, and 15% in the last six months. Retail and construction also appear to be above average. Working hungover or intoxicated appears to be least common in education and health and social care, but even in these sectors, over 30% of workers have done so at least once.

Figure 9: Have you ever been to work hungover or under the influence of alcohol? – by reported annual income⁴¹

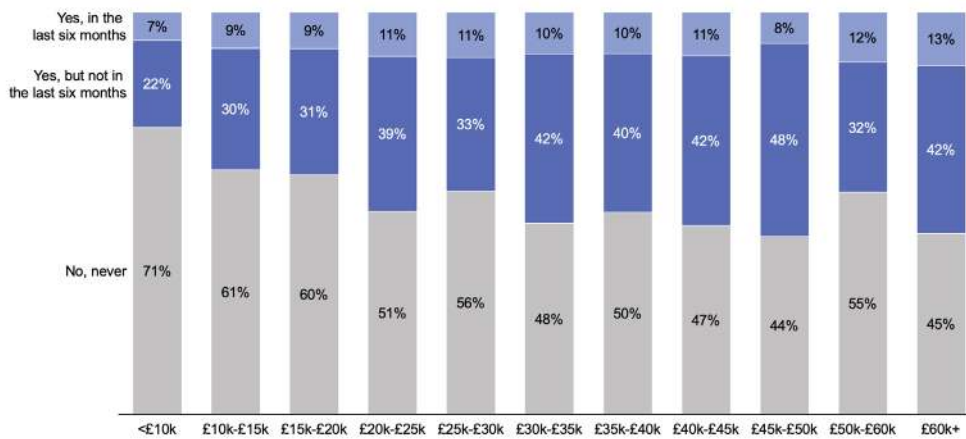
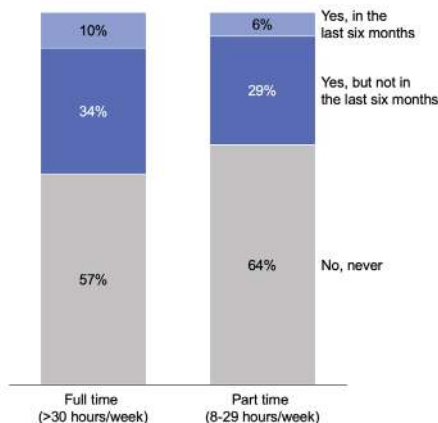


Figure 9 shows how the prevalence of working hungover or intoxicated varies by reported income.⁴² The very lowest income workers (earning less than £10,000 a year) have the lowest prevalence, and those earning more than £45,000 a year have the highest.

Part time workers are also less likely to have worked hungover or intoxicated. 36% had ever done so, and 6% in the last six months, compared with 43% and 10% for full time workers (figure 10).

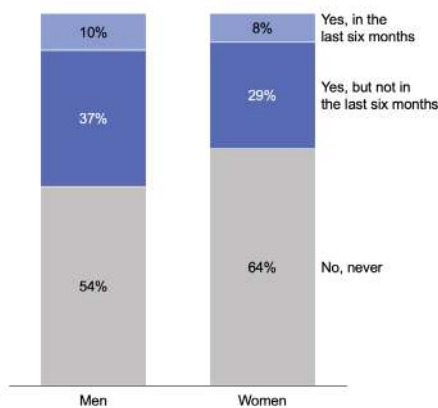
41 Though for legibility the income categories have been simplified to be expressed as round numbers, to avoid overlap the categories actually end just below the upper bound: '£10k-£15k' is actually £10,000-£14,999, '£15k-£20k' is actually £15,000-£19,999, and so on.
 42 For those respondents that reported their income as an hourly wage, it was assumed that they work 40 hours a week for 46 weeks to convert this into an annual figure.

Figure 10: Have you ever been to work hungover or under the influence of alcohol? – by working status



Men are more likely to be affected by their drinking at work: 46% have ever worked hungover or under the influence, compared with 36% of women (figure 11).

Figure 11: Have you ever been to work hungover or under the influence of alcohol? – by gender



35 to 44-year-olds are the most likely to have ever gone to work hungover or under the influence, but younger workers are most likely to have done so recently (figure 12). This indicates that the prevalence might have declined in recent years as workers now in their 30s and 40s may have been more affected by their drinking when they were younger than the current cohort.

Figure 12: Have you ever been to work hungover or under the influence of alcohol? – by age

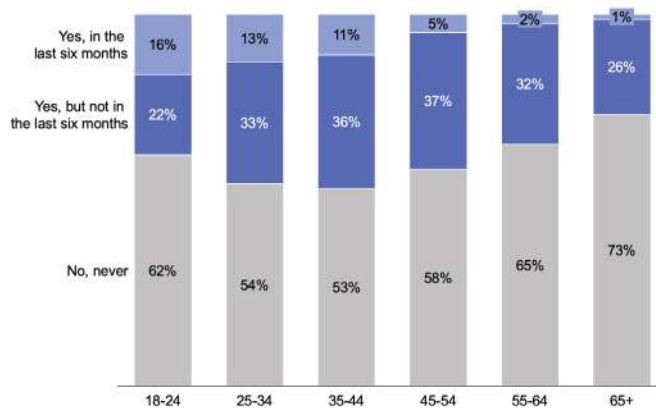
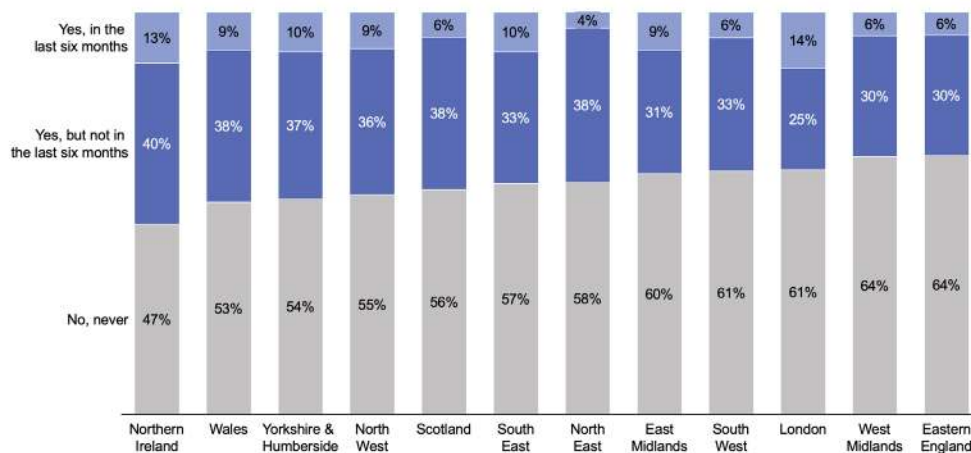


Figure 13 shows regional differences in responses. Overall, Northern Irish workers were most likely to report working hungover or under the influence of alcohol, and workers in the West Midlands and Eastern England least likely. Though at 39% London had the lowest prevalence of ever having worked hungover or under the influence, 14% of Londoners had done so in the last six months, the highest in the UK. This likely reflects the age profile of the city, as this pattern is similar to that of younger workers in figure 12.

Figure 13: Have you ever been to work hungover or under the influence of alcohol? – by region



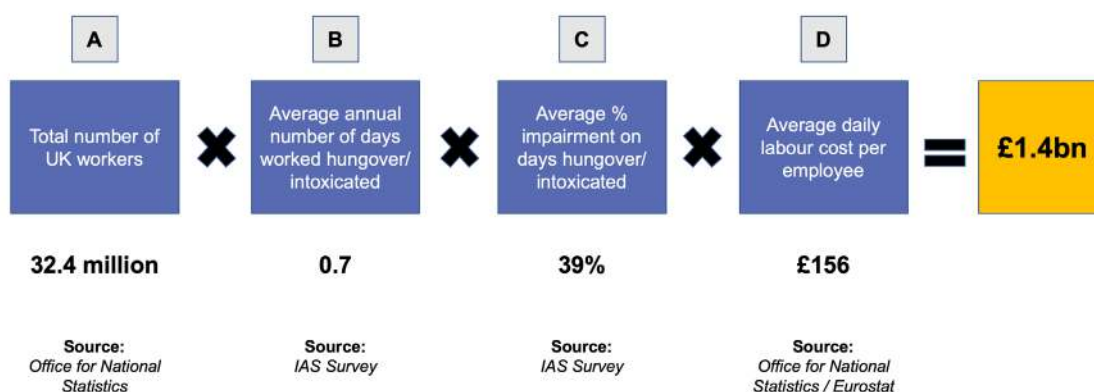
Economic cost of working hungover/intoxicated

Figure 14 reproduces our formula for calculating the economic cost of working hungover or intoxicated, with our estimates for each of the variables. Variable A, the total number of UK workers, is estimated by the Office for National Statistics (ONS) to be 32.4 million.⁴³ Variable B, the average annual number of days worked hungover or intoxicated, is calculated from our survey by doubling the average number of times respondents reported being hungover or intoxicated in the past six months.

43 Office for National Statistics (2019), Number of People in Employment (aged 16 and over, seasonally adjusted). Available from: <<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/timeseries/mgrz/lms>>. [Accessed 12 April 2019].

If a respondent reported being hungover or intoxicated between three and five times in the last six months, we assumed that they had done so four times in the last six months; if they reported between six and 10, we assumed eight. Overall, including those workers that had not been to work hungover or intoxicated, the average number of days hungover or intoxicated was 0.7 per year. Variable C, average impairment, is calculated using self-reported performance on our survey. It is 39%, as calculated on page 15. Variable D estimates the average labour cost to employers associated with a day’s work.⁴⁴ The average hourly wage in the UK, according to ONS’ Annual Survey of Hours and Earnings is £16.72.⁴⁵ Assuming the average working day is eight hours (as implied by the fact that the average full time working week is 39 hours),⁴⁶ this means average daily wages are £133.76. However, according to Eurostat, wages only account for 86% of total labour costs, with the rest made up by national insurance, pension contributions and employee benefits.⁴⁷ Once we include non-wage labour costs, the average cost of a day’s work is £156.

Figure 14: Formula for calculating economic cost



Multiplying these numbers together, **we estimate that the total annual cost of people working hungover and under the influence of alcohol to the UK economy is £1.4 billion.**

It is worth noting that this figure is sensitive to the inclusion of two specific respondents to the survey, who each reported working hungover or intoxicated 100 times in the past six months, substantially more than anybody else. Because these figures are so high, these two respondents account for 16% of the total number of hangover days reported in the entire survey. We have decided to treat these reports as genuine. It is certainly conceivable that very heavy drinkers drink alcohol most days, and so may be affected by their drinking at work three or four times a week. The existence of this group is also consistent with Willis PMI’s survey, which finds that 2% of people that have been to work hungover do so more than 50 times a year.⁴⁸ However, if we exclude these two respondents as outliers, variable B, the average number of days affected by drinking per employee, falls to 0.6, giving us a **lower bound estimate of £1.2 billion.**

44 Rather than multiplying together the average number of hangover/intoxicated days, average impairment and average wages, we had originally intended to multiply each of these variables for each individual and then sum across the whole survey sample. However, we were unsure about the quality of income data from the survey since a) around a quarter of respondents did not provide information about their income and b) a number of assumptions were necessary to make incomes reported in hourly, monthly and annual terms comparable. Given that working hungover/intoxicated appears to be more prevalent among richer workers, our figure for the economic cost may be an underestimate.

45 Office for National Statistics (2019), Earnings and hours worked, all employees: ASHE Table 1. Available from: <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/allemployeesashtable1>. [Accessed 12 April 2019].

46 Ibid.

47 Eurostat (2019), Total wages and salaries % of total labour costs. Available from: <https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=tps00113&plugin=1>. [Accessed 12 April 2019].

48 Willis PMI Group, op. cit.

Discussion

Findings

We find that 42% of British workers have ever been to work hungover or under the influence of alcohol. This is somewhat higher than previous similar surveys, likely due to differences in question wording. Our survey asked respondents about going to work intoxicated as well as hungover. It also asked about 'ever' going to work hungover, and is phrased in the past tense whereas other surveys have asked 'how often' people work hungover, phrased in the present tense.⁴⁹ Consequently, people who have in the past worked hungover, but do not consider it to be a habit they maintain may be included in our figure but not in others'.

By contrast, our estimate of 9% of workers being hungover or intoxicated at some point in the last six months is somewhat lower than for previous surveys, which indicated that 10% or more of the workforce went in hungover on at least a monthly basis. This is harder to explain, but it may be a consequence of lower overall drinking, particularly among young people, in the past 10-15 years.⁵⁰

Overall, we estimate that on average, workers are hungover or intoxicated on 0.6-0.7 days a year. That amounts to between 75,000 and 89,000 workers on an average work day.⁵¹ However, our estimates of the frequency of working hungover or intoxicated are somewhat lower than in previous studies: the majority of our respondents have only done so once or twice in the last six months, and only 13% more than five times. By contrast, 78% of people in Willis PMI's survey that had worked hungover reported more than 10 hangovers a year.⁵² The cause of this discrepancy is unclear. It may be explained partly by the higher response options given to participants in that survey (1-10, 10-20, 20-30, 30-40, 40-50, >50), which may have anchored them on a higher number of hangovers. It may also be due to the longer reporting period in Willis PMI's survey (a year, as opposed to six months in ours), which may have led to less accurate recall.

Reported impairment when working hungover or intoxicated was higher in our survey than in the existing literature. In our survey, people said they were 39% less productive when affected by alcohol as compared with the 25-30% range that has typically previously been used.

We find alcohol affects productivity across all parts of the country, in all sectors and among workers of all backgrounds. It is more common among men and younger workers and is particularly prevalent in the leisure and hospitality industry. Part time workers, those in the health or education sectors and workers on the lowest incomes are much less likely to have seen their work affected by their drinking.

Overall, we estimate that the cost to the UK economy of working hungover or under the influence of alcohol is between £1.2 billion and £1.4 billion a year. If this were included in the UK Government's estimate of the economic costs of alcohol, that figure would rise by almost 20% from £7.3 billion to £8.7 billion.⁵³

Strengths and limitations

Our survey provides up-to-date evidence on the impact of alcohol on workplace productivity from a large, nationally representative survey. It should be clear by now that measuring productivity is very challenging. Our approach is admittedly crude: we have simply asked workers how they think their

49 Ibid.

50 Office for National Statistics (2018), Adult drinking habits in Great Britain. Available from: <<http://bit.ly/onsdrinkhabit>>. [Accessed 5 April 2019].

51 Assuming 260 work days in a year.

52 Willis PMI Group, op. cit.

53 Home Office (2012) A Minimum Unit Price for Alcohol Impact Assessment. London: Home Office, p. 5.

drinking affects their work, and taken them at their word. An implicit, and we believe reasonable, assumption is that workers are best placed to judge their own productivity. Their assessments will not be perfect, but they are likely to be better than anybody else's.

Of course, we are also assuming that workers can accurately remember how often they have been hungover or intoxicated at work, and that they will honestly report this. These are common issues with all self-reported data. We included a memory prime task in our survey questionnaire specifically to aid recall. Our survey clearly shows that many people are willing to admit to being affected by their drinking at work, and it is likely that they were more candid because the survey was administered anonymously online. All the same, it is possible that we have underestimated the prevalence and impact of working hungover or under the influence because some respondents may have been embarrassed or reluctant to admit to it.

An issue with our question on work performance (question 6) is that it may force a spurious precision on respondents. Can an individual really discern the difference between being 30% less effective and 40% less effective than normal? Our hope is that even if specific reports should not be taken too literally, on average across hundreds of responses, they should give us a meaningful order of magnitude as to the impact of drinking on the workplace.

Our estimate of the cost to the economy of working hungover or intoxicated relies on a further set of assumptions. First, we assume that any impairment in a worker's productivity is not already reflected in their wages, as it would be in a perfectly functioning labour market. In practice though, employers may not be aware of the impact of drinking on their workforce productivity, and wages may not be flexible enough to adjust to these differences in productivity.⁵⁴ Second, despite recognising labour markets are imperfect, we nonetheless assume that employment costs are a reasonable guide to labour productivity. This may lead to an underestimate because we are not counting the share of workers' output that goes to employers as profit.⁵⁵ Third, and perhaps most problematically, we assume that lost productivity due to working hungover or under the influence of alcohol is not 'made up' elsewhere: for example, by being covered by colleagues, working harder at other times, working longer hours, or deprioritising less important tasks. If we accounted for such behaviours, it is possible that our estimate would be lower. On the other hand, we have not accounted for any negative effect of a person working hungover or intoxicated on their colleagues' output, so we may be underestimating the full impact. All of these assumptions are standard – they reflect the approach taken in the Scottish Government's estimate of presenteeism⁵⁶ – but they are open to challenge.

54 Single et al, op. cit. p. 40.

55 Bhattacharya, A. (2017), op. cit., p. 32.

56 York Health Economics Consortium, op. cit.

Conclusion

We estimate that 42% of British workers have ever been to work hungover or under the influence of alcohol, and that 9% have done so in the last six months. On an average work day, our survey suggests that between 75,000 and 89,000 workers are impaired by their drinking. That comes at a cost to the UK economy of between £1.2 billion and £1.4 billion a year.

These estimates, based on self-reports from a nationally representative survey, help us begin to quantify an important, but often neglected aspect of the alcohol policy debate: the impact of alcohol on workplace productivity. As we have made clear, these are difficult phenomena to measure. Consequently, more research is needed, using different methodological approaches, and exploring alcohol's impact in different settings. What our survey shows beyond doubt, though, is that working while hungover or under the influence of alcohol is a significant issue, with meaningful costs to the economy, deserving of greater attention.

Appendix A: Survey questionnaire

1 Which of these best describes the industry you work in?

- | | |
|--|---|
| <input type="radio"/> Health and social care | <input type="radio"/> Manufacturing |
| <input type="radio"/> Education | <input type="radio"/> Professional services |
| <input type="radio"/> Other public sector | <input type="radio"/> Construction |
| <input type="radio"/> Retail | <input type="radio"/> Transport and storage |
| <input type="radio"/> Hospitality & leisure | <input type="radio"/> Other |

2 Approximately how much do you earn before taxes? Please write this as EITHER how much you earn in an hour OR month, whichever you find easier.

- £[Free Text] per hour
- £[Free Text] per month
- Prefer not to say

3 Have you ever been to work hungover or under the influence of alcohol?

- No, never
- Yes, but not in the last six months
- Yes, in the last six months

[If Yes in the last six months, go to next question. Otherwise skip to question 7]

4 Thinking about the past six months, how many times have you gone to work hungover or under the influence of alcohol?

- Never
- Once
- Twice
- 3-5 times
- 6-10 times
- More than 10 [Please specify the number]

Now think back to last time you went to work with a hangover/under the influence of alcohol.

5 What was the impact on your work? (Tick all that apply)

- I was less productive/effective
- My team was less productive/effective
- I was more stressed
- I had to work longer hours
- There was a negative effect on my team's morale

6 On a scale of 1-10, please rate how well you performed your job on the days you went to work even though you were hungover/under the influence of alcohol (1 indicates a much worse performance than usual and 10 that your work was not affected)

- 1
 2
 3
 4
 5
 6
 7
 8
 9
 10

7 *In the past six months, have there been any occasions when you suspected that one or more of your colleagues at work may have been hungover or under the influence of alcohol?*

- Yes
- No

[Only proceed to question 8 if Yes; otherwise end of survey]

8 *What was the impact on you of your colleague being hungover or under the influence of alcohol? (Tick all that apply)*

- I had to work harder
- I was less productive/effective
- My team was less productive/effective
- I was more stressed
- I had to work longer hours
- There was a negative effect on my team's morale

Appendix B: Survey sample demographics

Gender	Weighted	Unweighted
Male	54%	54%
Female	46%	46%
Total	3,399	3,606

Age	Weighted	Unweighted
14-17	0%	0%
18-24	10%	11%
25-34	24%	24%
35-44	24%	23%
45-54	24%	23%
55-64	14%	14%
65+	4%	4%
Total	3,399	3,606

Region	Weighted	Unweighted
Scotland	9%	9%
North East	4%	4%
North West	12%	11%
Yorkshire & Humberside	7%	7%
West Midlands	8%	9%
East Midlands	6%	6%
Wales	4%	5%
Eastern	10%	9%
London	14%	16%
South East	15%	13%
South West	8%	8%
Northern Ireland	3%	3%
Total	3,399	3,606

Social Grade	Weighted	Unweighted
A	8%	9%
B	21%	22%
C1	31%	31%
C2	22%	22%
D	17%	15%
E	0%	0%
Total	3,399	3,606

Ethnicity	Weighted	Unweighted
White	89%	89%
Mixed	2%	2%
Asian	5%	5%
Black	2%	2%
Chinese	1%	1%
Refused to answer	1%	1%
Total	3,399	3,606

Religion	Weighted	Unweighted
Christian	42%	42%
Muslim	3%	3%
Hindu	1%	1%
Jewish	0%	0%
Sikh	0%	0%
Buddhist	1%	1%
Other	1%	1%
None	48%	48%
Refused to answer	3%	3%
Total	3,399	3,606

Industry	Weighted	Unweighted
Health & social care	12%	13%
Education	10%	10%
Other public sector	9%	9%
Retail	12%	11%
Hospitality & leisure	6%	6%
Manufacturing	7%	7%
Professional services	8%	8%
Construction	4%	5%
Transport & storage	5%	6%
Other	26%	26%
Total	3,399	3,606

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