The burden of alcohol drinking on co-workers in the Australian workplace

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ABSTRACT

Objective: To estimate the cost of the extra time worked by Australian workers due to their co-workers' alcohol drinking.

Design, setting and participants: A secondary analysis of data obtained from 1677 Australian workers aged 18 years or older collected as part of a broader national study into the third-party harms of alcohol. Computer-assisted telephone interviews were conducted between October and mid December 2008.

Main outcome measures: Self-reported measures of the time spent covering for other people at work because of their alcohol drinking; measures of other impacts from co-workers' alcohol drinking; and self-reported income.

Results: Around a third of Australian workers have experienced negative effects from their co-workers' alcohol drinking, with 3.5% of workers reporting having to work extra hours to cover for others. The total annual cost to the Australian economy of this extra work is estimated to be $453 million.

Conclusions: The results of this study suggest that Australian workers are significantly affected by other people's alcohol drinking, at considerable cost. This finding highlights the significant cost to the workplace of alcohol consumption, extending previous work which has focused only on alcohol-related absenteeism.

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The cost of alcohol use is usually framed in terms of the health cost to the drinker. But the cost of alcohol use to society is far-reaching, with many of the social costs of alcohol drinking borne by relatives, friends or associates of the drinker.[1,2] The social consequences of alcohol use have been defined as "changes, subjectively or objectively attributed or attributable to alcohol, occurring in individual social behaviour, in social interaction or in the social environment".[3] Parallel arguments have successfully been made about the costs to society of tobacco use that are due to passive smoking.[4,5] To date, only a few Australian studies have quantitatively investigated the social harms of alcohol drinking to other individuals who come into contact with the drinker on a regular basis.[6] In particular, no study has considered the cost of alcohol use to the workplace from the perspective of co-workers and the negative effects on them of heavily drinking colleagues.

The cost of alcohol use in the workplace is multifaceted and considerable and can be caused by reduction in the productive workforce from premature mortality or morbidity, absenteeism due to alcohol-related sickness, and reduced productivity while at work. Australian studies investigating the issue have focused on the cost to the Australian workplace from absenteeism and premature mortality or morbidity of the drinker.[4,7]

Our study takes a new perspective on the cost of alcohol in the workplace and measures the self-reported burden on workers caused by colleagues who drink heavily. Heavy drinkers may plausibly cause an additional burden on co-workers in a number of ways. For example, their absenteeism may cause additional work for those who "cover" for them, or their reduced productivity or suboptimal quality of work could create a burden for those who work with them. Our aim was to quantify the cost of this additional burden in economic terms.

METHODS

Survey data

The Range and Magnitude of Alcohol's Harm to Others survey is a household-based cross-sectional survey with the broad aim of describing and measuring the adverse effects of alcohol use on people other than the drinker in Australia. Households were selected at random from phone numbers listed in the electronic White Pages residential telephone directory. Minimum sampling quotas were set within geographical strata to ensure national coverage. Interviews were conducted using computer-assisted telephone interviewing (CATI) between October and mid December 2008. The survey and its objectives are described in more detail elsewhere.[8] Ethics approval for the study was granted by the Victorian Department of Human Services Human Research Ethics Committee.

Survey respondents who were currently employed or doing unpaid voluntary work were asked about co-workers whom they "consider[ed] to be a fairly heavy drinker or someone who drinks a lot sometimes" at any time in the past 12 months. Respondents were then asked whether the co-workers' alcohol drinking had negatively affected them in some way in the past 12 months. Those responding positively were, in turn, asked questions about three specific effects:

> Because of your co-workers' drinking, how many times in the last 12 months: a) Has your ability to do your job been negatively affected? b) Were you involved in an accident or close call at work? c) Have you had to work extra hours?

Respondents who had worked extra hours because of co-workers' alcohol drinking were asked to make an estimate of the total time involved. In a separate section of the questionnaire, respondents were asked about household income and the proportion of it that they personally contributed.

Statistical analysis

Data analysis was undertaken using the survey module in Stata statistical software, version 9 (StataCorp, College Station, Tex, USA). The proportion of workers with one or more co-workers whom they considered to be a heavy drinker was estimated, along with the proportion who reported that they were negatively affected by it.

Survey weighting

The survey data were weighted according to the inverse of the respondent's probability of selection into the sample (eg, a respondent in a single-person household has more chance of being selected than someone liv-

Proportion of workers who reported having heavily drinking co-workers during the past 12 months, and those who were negatively affected ($n = 1677$)

Respondent reported:	No.	% (95% CI)
Heavily drinking co-worker(s)	532	31.7% (29.2%–34.4%)
Negatively affected by co-workers' drinking	134	8.0% (6.7%–9.6%)
Worked extra hours because of co-workers' drinking	59	3.5% (2.6%–4.9%)

ing with other potential respondents). Post-weightings were also applied to reflect the age and sex composition in each geographical sampling stratum. Thus, for example, a young male respondent (whose cohort was under-represented in the sample compared with the population benchmarks) had a higher weighting, so that analysis was based on a sample with a more representative distribution. Furthermore, the weightings were scaled up so that the weighted sample size was equal to the 2006 Australian population size, providing a means for making national estimates. All the results reported here are based on the weighted data.

Cost calculation

The economic cost of the extra hours worked for each individual was calculated by multiplying the total extra hours worked by an estimate of the hourly wage for each individual. The hourly wage was calculated from the proportion of the household income contributed by the individual (assuming a standard working week of 37.5 hours for 47 weeks in the year). The total cost to Australian society was calculated by summing the individual costs across the entire sample. Confidence intervals were produced using the survey module in the statistical software.

RESULTS

The survey was completed by 2649 respondents aged 18 years or older, from separate households, representing a cooperation rate of 49.7% and a response rate of 35.2%.[8] While the response rate for the study was low, the sample was relatively representative of the population on demographic and social variables, with men, young respondents (18–34 years) and people born overseas slightly under-represented, although the impact of this has been limited by the population weighting. On employment status, the key variable of interest for this study, the study sample closely approximates the population distribution in the 2006 Australian Census.

Of the 2649 respondents, 1677 were currently employed or doing unpaid voluntary work. Almost a third of the working population reported having a co-worker whom they considered to be a fairly heavy drinker or someone who drinks a lot sometimes (Box). Among these respondents, the mean number of drinking co-workers reported was 5.8 (95% CI, 4.6–7.0), although the modal response was one. A smaller proportion of the working population (8.0%; 95% CI, 6.7%–9.6%) reported that they had been negatively affected in some way in the past 12 months by their co-workers' drinking; and 3.5% (95% CI, 2.6%–4.9%) reported having to work extra hours because of their co-workers' alcohol drinking.

Among those who had to work extra hours because of co-workers' alcohol drinking, the burden was considerable. On average, these workers reported having to work extra hours 20.9 times (95% CI, 11.7–30.1 times) in the year, although the modal response was twice. This amounted to an additional 48.1 hours per affected respondent (95% CI, 31.6–64.7 hours) worked in the year; or, to put it another way, a little more than an extra week worked in the year because of co-workers' alcohol drinking. (One outlier reporting 750 extra hours worked was excluded from the analyses.)

The average hourly pay rate of workers working extra hours because of co-workers' alcohol drinking was calculated to be $23.80 (95% CI, $22.80–$24.90). Applying the hourly pay rate for each individual to the number of extra hours he or she worked resulted in an annual mean cost of $1933 (95% CI, $952–$2913) per individual working extra hours. When these costs were weighted up to reflect the Australian working population, the corresponding total annual population cost was $453 million (95% CI, $202–$703 million).

Of the working population in the study, 4.2% (70/1677; 95% CI, 3.2%–5.4%) reported that their ability to do their jobs had been negatively affected by their co-workers' drinking. On average, respondents reported their work was negatively affected 16.7 times (95% CI, 8.9–24.6 times) in the past 12 months. Finally, 0.6% (10/1677; 95% CI, 0.3%–1.2%) of the working population reported being involved in at least one accident or close call because of drinking by co-workers, with affected respondents reporting an average of 3.1 (95% CI, 0.2–6.1) accidents or close calls in the past 12 months.

DISCUSSION

Our findings show that the experience of having a heavily drinking co-worker is common in the Australian workplace, being reported by almost a third of workers in our study, with a smaller proportion reporting that they had been negatively affected by this, including having to work extra hours.

It has been found that, in Australia, young employees and males are more likely to report alcohol-related absenteeism than older workers and females.[9] Perhaps surprisingly then, we found that those working extra hours due to others' alcohol drinking were significantly more likely to be male and younger (data not shown); however, our numbers were small and the study was not designed for this purpose.

A substantial proportion of respondents who reported being negatively affected by co-workers' alcohol drinking did not report any of the three specific effects (working extra hours, work performance affected or accidents and close calls). Possibly, this group suffered other effects not measured by the survey (eg, worrying about safety or performance in the workplace because of their heavily drinking co-worker, or experiencing social stresses due to a poor working relationship with their co-worker).

The burden of extra hours worked for heavily drinking colleagues was distributed unequally across the workforce, with less than 5% of the working population working additional hours because of their co-workers' alcohol drinking, but the cost to affected workers is high. We did not attempt to attribute economic costs to the harms to workers whose work performance was negatively affected by the alcohol drinking of their co-workers or whose health and safety were put at risk through accidents or close calls, although they are likely to be substantial. Therefore, while our estimate of the cost to co-workers of alcohol use by heavily drinking colleagues is large, it may represent the tip of the iceberg.

The large annual cost we estimated at the population level of $453 million for extra hours worked because of co-workers' alco-

hol drinking is comparable to estimates of the cost of alcohol-attributable absenteeism in Australia.[4,7] One study, using data from the 2001 National Drug Strategy Household Survey, calculated the cost of self-reported alcohol-related absenteeism in the Australian workforce to be $437 million.[7] Other researchers have replicated this method using more recent data from the 2004 National Drug Strategy Household Survey, estimating a $368 million cost of absenteeism due to alcohol drinking.[4]

In New Zealand, the cost of alcohol-related lost productivity has been calculated to be $57 million per year.[10] This estimate was based on self-declared absenteeism and reduced-efficiency days due to alcohol drinking in a survey of 2638 drinkers in paid employment. In the United Kingdom, the cost of alcohol misuse in the workplace (including absenteeism, reduced employment and premature mortality) was calculated to be as much as £6.4 billion per year, with up to 17 million days (£1.8 billion) per year lost due to alcohol-related absence.[11,12] Similar studies in Canada and the United States have produced cost estimates for absenteeism and reduced productivity from alcohol in excess of $1 billion.[13,14]

We are cautious about making direct comparisons between these studies and our own. From our study it is not possible to identify the reason why co-workers are working additional hours on behalf of heavy drinkers. It may be to make up for the absenteeism of the heavy drinker, but it may also encompass other reasons, such as reduced productivity, mistakes or lower quality work on the part of the heavy drinker. The most likely scenario is a combination of several factors that probably vary between respondents. Other Australian research concludes that it is not possible to quantify loss in on-the-job productivity due to alcohol, but that, if measured, such costs would be considerable.[4]

This study suffers from a number of limitations. Our reliance on proxy respondents is both a key benefit of the study, as it allows triangulation of results from other methods, but also a key limitation. There is potential bias, as proxy respondents may be wrong about their co-workers' alcohol drinking behaviour, or may wrongly attribute problems in the workplace to it. Recall bias may affect respondents' estimates of the number of times they worked extra hours and the number of hours worked on each occasion in the previous 12 months.

Our assumption of a standard working week of 37.5 hours for 47 weeks in the year is arbitrary. According to the Australian Bureau of Statistics, the average Australian working week was 33.7 hours in 2009, reflecting the contribution of part-time and shift workers.[15] It is very likely that some of our respondents were also part-time or shift workers, but this was not asked in the survey. We chose to use an approximation to a full working week to render our estimates more conservative.

Income was measured indirectly from the proportion of the household income reported to be contributed by the respondent. Sources other than work may contribute to household income, and this may have inflated our estimate of the hourly wage.

The absolute number of respondents reporting extra hours worked because of a heavily drinking co-worker was low; this is reflected in the wide confidence intervals for our estimates of the population cost.

Finally, the survey used in this study had a low response rate, raising some doubt as to the generalisability of these findings. However, the response rate is of a similar magnitude to rates for other surveys in Australia — for example, the CATI component of the 2007 National Drug Strategy Household Survey reported a cooperation rate of 39.3%.[16] Moreover, the study is relatively representative of the Australian population across a number of sociodemographic variables (including employment status), and data have been weighted to correct for obvious variations from the population structure.

We feel that, despite its limitations, our study goes some way to accounting for alcohol-related lost productivity in the workplace by taking the new approach of asking co-workers to estimate the amount of extra work they are taking on due to others' alcohol drinking.

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COMPETING INTERESTS

None identified.

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