

# **SAFETY IMPACTS OF ALCOHOL AND OTHER DRUGS IN CONSTRUCTION: DEVELOPMENT OF AN INDUSTRY POLICY AND CULTURAL CHANGE MANAGEMENT PROGRAM**

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There is increasing concern about the impact of employees' alcohol and other drug (AOD) consumption on workplace safety and performance, particularly within the construction industry. While most Australian jurisdictions have identified this as a critical safety issue, information is limited regarding the prevalence of AODs in the workplace and there is limited evidential guidance regarding how to effectively and efficiently address such an issue. The current research aims to scientifically evaluate the use of AODs within the Australian construction industry in order to reduce the potential resulting safety and performance impacts and engender a cultural change in the workforce - to render it unacceptable to arrive at a construction workplace with impaired judgement from AODs. The study will adopt qualitative and quantitative methods to firstly evaluate the extent of general AOD use in the industry. Secondly, the development of an appropriate industry policy will adopt a non-punitive and rehabilitative approach developed in consultation with employers and employees across the infrastructure and building sectors, with the aim it be adopted nationally for adoption at the construction workplace. Finally, an industry-specific cultural change management program and implementation plan will be developed through a nationally collaborative approach. Final results indicate that a proportion of those sampled in the construction sector may be at risk of hazardous alcohol consumption. A total of 286 respondents (58%) scored above the cut-off cumulative score for risky or hazardous alcohol. Other drug use was also identified as a major issue. Results support the need for evidence-based, preventative educational initiatives that are tailored to the industry. This paper will discuss the final survey and interview results.

Keywords: alcohol, drugs, education, safety.

## **INTRODUCTION**

While it is estimated that 640,700 Australian persons suffered a work-related injury or illness in 2009-2010 (ABS 2010), and 444 persons lost their lives as a result of a work-related traumatic injury in 2008-2009 in Australia (Safe Work Australia 2011),

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very little is known about what proportion of such accidents are directly attributable to the effects of alcohol and other drugs (AODs). This is despite AOD consumption being relatively prevalent within the Australian community (Holland, Pyman and Teicher 2005) and the clear link between such consumption and subsequent declines in cognitive and behavioural performance (Elliot and Shelley 2006). Nevertheless, the impact of employees' AOD consumption on workplace safety and performance is an on-going issue for Australian employees, particularly within the construction industry (Berry, Pidd, Roche and Harrison 2007). This documented concern is reflected in the increasing array of workplace policies being developed to improve construction site safety through addressing the issue of employee impairment. Improving workplace health and safety is particularly important for this arena given the current size, economic value and expanding nature of the Australian construction industry. It is argued that developing a nationally consistent, contemporary and collaborative approach across the construction workforce is needed to engender a cultural change in the workforce. Such an approach may take a similar form to the on-going initiative in securing a cultural change to drink-driving in our society where peer intervention and support is encouraged and appears integral to maintaining such change (Ferguson, Schonfeld, Sheehan and Siskind 2001).

The current research aims to scientifically evaluate the relationship between the use of AOD and the safety impacts within the Australian construction industry to engender a cultural change in the workforce - to render it unacceptable to arrive at a construction workplace with impaired judgement from AODs. A national approach across the Australian construction workforce - involving government representatives; employers and employees; unions; and other key industry stakeholders and experts will be adopted. An evaluation of the extent and nature of the problem, through an AOD consumption and behaviour assessment, will inform the development of an appropriate industry policy and cultural change management program. The study builds on the credibility and networks developed through the CRC for Construction Innovation's landmark achievements in safety including the Construction Safety Competency Framework (Dingsdag, Biggs, Sheehan and Cipolla 2006), Guide to Best Practice for Safer Construction (Fleming, Lingard and Wakefield 2007), A Practical Guide to Safety Leadership (Biggs, Dingsdag and Roos 2008) and the Safety Effectiveness Indicators (Cipolla, Biggs, Dingsdag and Kirk 2009; Biggs, Dingsdag, Kirk and Cipolla 2010).

### **AOD in the workplace: the Australian context**

Anecdotal evidence from the infrastructure and building sectors highlights issues of drugs and alcohol and its association with safety risk on construction sites. Currently, there is no clear evidence on the prevalence and risk of AOD use among Australian construction workers. While there are several studies that offer consumption rates and patterns in various industry and occupational groups (Pidd, Boeckmann and Morris 2006; Banwell, Dance, Quinn, Davies and Hall 2006; Evans, Tait, Harvey and Newbury 2005; Davey, Obst and Sheehan 2000a), such industry-specific information is limited for a number of reasons (including small sample sizes with specific groups, when they were conducted and the amount of time that has elapsed since the research and methodological factors such as measurement variation). Such factors limit the degree to which these findings can be generalised across industries and the wider workforce (Pidd and Roche 2011). While many companies do maintain an AOD policy and associated procedures, there is still tremendous variety across different types of industries and within industries in regards to content and outcomes, and

questions remain as to what is the best approach. Importantly, there appears considerable merit in examining the feasibility and effectiveness of more contemporary approaches that extend beyond traditional workshops and education-based methods and embrace techniques similar to internet e-therapy which have demonstrated positive preliminary results (Klein, Meyer, Austin and Kyrios 2011).

Almost universal across the Australian construction industry is the adoption of the theoretical construct of organisational safety culture (Glendon 2003; Guldenmund 2000; Reason 2000). When considering predominant pathways to create behavioural change in the workplace, there are two main pathways to ensure compliance: (1) the extrinsic pathway, governed by systems and rules with rewards and punishments; and (2) the intrinsic pathway, establishing voluntary compliance via individual commitment to safety (Glendon 2003). For example, in the mining industry the extrinsic pathway with a legislative framework governing mining operations and the implementation of AOD policy and programs has resulted in a heavy focus on testing. However, within the construction industry across Australia, there is generally not as extensive or explicit AOD workplace legislation and there is also wide variability between organisations, sites and practices. In general the construction industry relies heavily on an educative approach built around the intrinsic motivation of individuals to operate safely when it comes to AOD use (Guldenmund 2000; Sully 2001).

There is now a national need to develop sound scientific research, based on a safety culture framework, to assist the industry in delivering appropriate, up to date and evaluated strategies and materials targeted at the unique needs and characteristics of the construction industry. It is proposed that the development of such educational initiatives should firstly be grounded in an accurate understanding of the aetiology, impact and consequences of AOD within the construction workplace. This should then be followed by the development and implementation of tailored and effective interventions designed to specifically target the extent and severity of the problem within the cultural and operating context of the construction industry. This paper will provide an analysis and discussion of data collected in phase 1 of the research, as outlined below.

## **METHODOLOGY**

This project was approved by the QUT Human Research Ethics Committee and will be led by an Academic Project Leader in partnership with a senior Industry Project Leader from a major Australian construction company. The project team will collaborate with academic leaders and experts in applied research in the area and will be guided strategically by an Industry Steering Committee with membership comprising representatives from key government, industry and union groups. The project will be achieved through four phases:

### **Phase 1: National qualitative and quantitative assessment of the use of AOD**

#### *Participants*

A survey method was adopted to gain a quantitative assessment of the use of AODs in the Australian construction workforce. It was expected that the survey (described below) would be distributed to approximately 500 employees at selected construction sites across Australia. Operational sites were selected by the Industry Project Leader, in consultation with the respective regional and safety management team. All employees at the selected sites and corporate headquarters were invited to participate.

In addition to the survey, semi-structured interviews were conducted to gain some qualitative insights into the safety impacts of AOD in the workplace. Interview numbers were dependent on the availability of employees on the particular day of each site visit.

### *Measures*

The World Health Organisation Alcohol Use Disorders Identification Test (AUDIT) was used. The AUDIT, while originally designed for use with clinical populations, has been widely used and validated in a variety of populations and contexts, including the workplace (Davey, Obst and Sheehan 2000a; Davey, Obst and Sheehan 2000b; Donovan, Kivlahan, Doyle, Longabaugh and Greenfield 2006; Lennings, Feeney, Sheehan, Young, McPherson and Tucker 1997; Neumann, Gentilello, Neuner, Weiß-Gerlach, Schürmann, Schroder, Muller, Haas and Spies 2009; Younga and Maysona 2010). There are 10 items on the AUDIT which are classified into three domains. The first domain (Q1-3) measures the quantity and frequency of alcohol consumption and screens for possible risk of hazardous consumption. The second domain (Q4-6) examines abnormal drinking behaviour, which may indicate early or established alcohol dependence. The third domain (Q7-10) probes for negative consequences related to alcohol consumption. Each question is scored from 0 to 4, with a cumulative range of 0-40. A total AUDIT score of 8-15 indicates a risk of harmful consumption and is most appropriate for simple advice focused on the reduction of hazardous drinking. A total AUDIT score of 16 or more indicates a high risk of alcohol problems and suggests the need for brief counselling and continued monitoring. A total AUDIT score of 20 or above warrants further diagnostic evaluation for alcohol dependence. Although these thresholds were established on the basis of a study on a clinical population, they have also been widely used and validated in non-clinical populations, including those listed above (Babor, Higgins-Biddle, Saunders and Monteiro 2001).

Four additional questions were developed by the research team for the purpose of this study and were included in the survey. These relate to readiness to change (e.g. “do you think that you presently have a problem with drinking” and “in the next 3 months, how difficult would you find it to cut down or stop drinking?”) and ‘other drug’ consumption (e.g. “when have you most recently used marijuana/cannabis” and “when have you most recently used ecstasy or meth/amphetamine type substances”). Demographic details were also included in the survey.

Structured interviews were also conducted across a number of roles within the company to identify major issues and themes. Interview questions centred on perceptions towards AOD use in the workplace (including perceived prevalence in the industry, how it affects you, your safety, performance and productivity, as well as that of your co-workers) and attitudes and perceptions towards existing AOD workplace policies (including knowledge of, perceived effectiveness and attitudes towards them as well as what could be improved).

### *Procedure*

Corporate headquarters and operational sites of the industry partner organisation were visited to distribute the AUDIT survey and conduct structured interviews with both management and employees. The research team worked closely with the relevant operational site and safety managers in order to access employees most effectively on each site. The AUDIT survey was distributed in hard copy to employees during their breaks along with a Participant Information Sheet and a plain envelope to seal the completed survey in, before returning to the researcher. All surveys are confidential

and anonymous and are now kept in a locked office. The researchers clearly communicated this to employees and that participation is entirely voluntary, that no names are recorded and that the data remains with the researchers at the end of the project. The interviews took place at both corporate headquarters and operational sites in a private room. Detailed notes were recorded by hand during the interviews and later thematically analysed.

### **Phase 2: Development of an appropriate industry policy**

A non-punitive, rehabilitative and educational approach will now be developed in consultation with employers, employees, and unions across the industry, with the aim being that the program will be adopted nationally for construction workplaces.

### **Phase 3: Development of a cultural change management program**

Upon development of an appropriate industry policy, the Australian Government, lead industry associations and key stakeholder groups and the research team will initiate an industry-wide collaborative approach to reducing the risk of impaired performance on construction sites and increasing workers' commitment to AOD safety. Previous work by Biggs, Dingsdag and Roos (2008); Biggs, Dingsdag and Kirk (2009); Cipolla, Biggs, Dingsdag and Kirk (2009) and Dingsdag, Biggs, Sheahan and Cipolla (2006) provide a significant starting point for the developing a cultural change management program that is directly tailored to the construction industry.

### **Phase 4: Development of an implementation plan**

An implementation plan will be designed and developed stemming from the initial data collected. This process will include the development of clear recommendations for industry use and will be educative in focus.

## **RESULTS**

This paper reports the results from phase 1.

### **Participants**

Final survey results are based on the completion of 494 surveys. All employees who were provided with a survey, at the selected sites, completed and returned it to the researcher on-site. The majority of respondents (n=464) were male, with a mean age of 35.7 years (SD=11.4). Most respondents (398) were employees; with the remaining 85 respondents employed as a contractor. The survey was distributed across all roles within the company with the majority of respondents classifying themselves as a tradesperson (155), a labourer (117), a plant operator (68), in an administration or engineering role (53) or as a supervisor (47). Surveys were collected across three states (Victoria, South Australia and Northern Territory). Interviews were conducted with ten employees across several roles in the company. Several less formal conversations were also had with employees on-site.

### **Survey: AUDIT results**

Of a possible maximum cumulative score of 40, the 494 respondents recorded a mean score of 9.98. Scores ranged from 0 to 40 with a median score of 9. A total of 286 respondents (58%) scored above the cut-off cumulative score for risky or hazardous alcohol use of  $\geq 8$ , with 185 respondents (65%) falling into the 8-15 scoring group, 58 respondents (20%) falling into the 16-19 scoring group and 43 respondents (15%) scoring 20 and above. Subsequent analysis focused on the three individual AUDIT domains that look specifically at consumption, dependency and alcohol-related

problems (see Table 1). The maximum score for Domain 1 is 12 (scores  $\geq 6$  indicating a risk of alcohol related harm. The maximum score for Domain 2 is also 12 (scores  $\geq 4$  indicating possible alcohol dependence. Any score in Domain 3 warrants further investigation.

Table 1: Mean AUDIT scores for each domain

AUDIT Domain	Mean (SD)	No. of respondents (and %) who scored at or above the cut off
Domain 1: Consumption	6.17 (3.1)	300 (61%)
Domain 2: Dependency	1.38 (2.1)	79 (16%)
Domain 3: Alcohol related problems	2.48 (3.1)	291 (59%)

### Survey: Additional questions

Four additional questions were included in the survey regarding self-rated dependency and past other drug use:

Thirty-three respondents reported that they either possibly or definitely had a problem with drinking. A further 19 respondents reported that they were unsure. Over the next 3 months, 71 respondents reported that it would be either fairly difficult or very difficult to cut down or stop drinking. Of those who scored above the cumulative score for hazardous alcohol use (n=286), 212 respondents (74%) reported that they do not have a problem with drinking and 157 respondents (55%) reported that it would be either very easy or fairly easy to cut down or stop drinking. In terms of prevalence, a total of 292 respondents (59%) had used marijuana/cannabis in their lifetime, with 46 respondents having used it in the last year (15.8%). A total of 196 respondents (40%) had used ecstasy or meth/amphetamine type substances in their lifetime, with 62 respondents having used it in the last year (31.6%).

### Structured interviews

The structured interviews identified a number of important issues. Firstly, links to reduced safety and productivity levels were confirmed by a number of those in safety advisory positions. Overall, there seemed to be a general lack of understanding and knowledge surrounding the physical and psychological effects of AOD use and how these effects might impair performance. This was despite the overall attitude that the use of AOD is detrimental to workplace productivity and safety. In terms of prevalence, AOD use was perceived (by those in safety roles) as a major issue that is only getting worse, particularly drugs because they are harder to detect as well as the changes that are seen in drug type ‘popularity’ and the increasing use of synthetic forms of illicit drugs. Prescription medications and other legal stimulants such as energy drinks were also identified by safety staff as a major concern.

While current policies and employer assistance programs were generally seen as effective, there was an overall support for the development of more comprehensive and tailored educational initiatives for employees and contractors within the construction workforce. In particular, the need for preventative programs – rather than focusing on the consequences of AOD use when it could be too late (i.e. testing people who are already at work). Specifically identified was the need to educate younger employees about “how to cope” with the lifestyle that can accompany a high-

salary, project-to-project, transient type work and “getting in early before we have to deal with the aftermath”. Acknowledging the difference between ‘career workers’ and ‘it’s just a job workers’ was identified as an important consideration in terms of how to communicate educational messages most effectively to employees. Several suggestions and feedback were offered for the more effective communication of AOD education to employees. These included the need for clear and simple visual hard copy brochures, fact sheets or posters, as well as videos about the physical and psychological effects and impacts of AOD. Training sessions (separate from the tool box talks and daily pre-starts) were identified as an appropriate opportunity to focus on a particular safety issue in a certain level of depth. There was also a positive response to the proposed development of a web-based resource – which would assist those who may find it difficult to seek help or advice about AOD at work. Indeed, job security was highlighted as a common fear regarding seeking help or advice about AOD at work. Finally, the use of a mentoring type initiative was suggested as a way of communicating knowledge, experience and advice to younger workers who may benefit from a more one-on-one approach with more experienced fellow workers.

Other issues included the importance of management support, maintaining a strong supervisor relationship with a strong commitment to preventing harm caused by AOD, and the consistent communication of policies and expectations right from the start of the project. Related to this was the importance of ensuring that sub-contractors are subject to the same policies and practices that company employees are subject to in their regular practices. Consideration of the culture of specific occupational groups was also identified as being important in that the nature and pressures of a job, with specific skills and hazards, can have a major effect on employees’ lives and relationships. Finally, educating the therapists and counsellors that are made available to employees, about the construction industry was identified as something that could be of great value.

## **CONCLUSIONS**

No known study has scientifically examined the use of AODs and corresponding safety impacts in the construction sector. As a result, there has been only limited adoption of nationally coordinated strategies that are supported by both employers and employees to render it socially unacceptable to arrive at a construction workplace with impaired judgment from AODs. Together, the objectives of this study are designed to contribute to a change in culture towards improving safety in the construction industry.

Results from phase 1 of this research indicate that as in the general population, a proportion of those sampled in the construction sector may be at risk of hazardous alcohol consumption. As general AOD use does not necessarily translate into workplace AOD use and impairment, these results do not tell us about when those in the ‘at risk’ group are drinking. A proportion of those ‘at risk’ will consume alcohol in private, in their own time, whereby their behaviour has no relevance to their performance at work. For others though, alcohol risk will translate into workplace risk. This evidence does not allow any accurate indication of what this risk might be. While many in the current sample appear to be at risk of hazardous alcohol consumption, a large proportion of these respondents claimed not to have a drinking problem. Many of these respondents also indicated that it would be fairly easy to cut back or stop their drinking behaviour. These results suggest that those who may be at risk are unaware that a problem may exist, further highlighting the need for

educational programs to increase knowledge and awareness of the effects of AOD. Other drug use (both illicit and licit) remains a huge concern with complex and contentious issues around detection and privacy. Taken together, results support the need for evidence-based, comprehensive and tailored responses in the construction workplace, and in the broad community, so that those who may be 'at risk' are provided with accessible and relevant information and/or help if and when necessary.

Results from phase 1 will now be used to inform the development of an industry policy and cultural change management program and implementation plan. This study is of major significance for Australia within the current context of harmonisation of industrial legislation in occupational health and safety and Federal and State Government investment to improving workplace safety and overall population health. This project will fundamentally contribute to a greater understanding of the impact of AODs in the Australian construction industry within a safety culture framework and, critically, bring together employer and employee groups nationally.

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