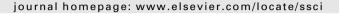


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#### Review

## Alcohol use among workers in male-dominated industries: A systematic review of risk factors



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#### ABSTRACT

Introduction: There is a growing body of work regarding alcohol use and the workplace. However, little work has been conducted on risk factors for alcohol use in male-dominated industries.

Method: A systematic review of risk factors for alcohol use in male-dominated industries was undertaken. A male-dominated industry was defined as an industry comprising predominantly male workers (i.e. ≥ 70%). This included agriculture, construction, mining, manufacturing, transport, and utilities industries. Searches were undertaken of major electronic databases (CINAHL, Cochrane Library, Informit, PsycINFO, PubMed and Scopus), the grey literature, and reference lists of retrieved papers for English language studies published between January 1990 and June 2012.

Results: Eighteen studies met the inclusion criteria. Most were cross-sectional in design. Methodological quality was assessed as moderate in nine studies and weak in the remainder. Factors associated with risky alcohol use were categorised into seven domains: demographic (being male, middle age), individual (depressed, negative life events), social norms at work (permissive drinking norms), work conditions (high workloads and job stress, low collegial support), team environment (supervisory abuse), work-home interference (using alcohol to unwind after work), and structural/socio-economic (lower SES workers), with some attenuation by income and other SES factors.

Conclusion: Alcohol primary prevention strategies and future research that targets specific high risk industries are warranted to address workplace drinking norms, reduce job workloads and stress, and improve workplace support. Multi-pronged, tailored strategies are needed in male-dominated industries that reflect the needs of high risk groups as well as targeting environmental, social, and contextual factors.

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#### 1. Introduction

There is growing interest in worker health and wellbeing (Calvert et al., 2012; Hinze et al., 2013; Shimazu et al., 2010; Treiber and Davis, 2012) and its impact on safety and productivity (Dollard and Neser, 2013). There is also increasing acceptance of the employer's duty of care for ensuring a safe and healthy workplace (Dollard and Neser, 2013; Treiber and Davis, 2012). A growing body of evidence suggests a broad range of work-related factors are associated with employees' health and wellbeing. In the working population, risky alcohol consumption and alcohol use problems (Cheng et al., 2012; Head et al., 2004; Kouvonen et al., 2008) result in significant health, social, and economic costs (Collins and Lapsley, 2008; Rehm et al., 2009). Particular subgroups of the working population have higher prevalence of alcohol use and misuse, including males, younger workers, and Indigenous employees (Pidd et al., 2008). However, the available evidence on risk factors for work-related alcohol use and associated harms has not been systematically reviewed within male-dominated industries. Such a focus is required to inform intervention and prevention strategies that target these industries.

In the United States, an estimated 15% of the workforce is affected by workplace alcohol use and impairment (Frone, 2006). The rate of binge and heavy drinking among US full-time employed persons is 29.7% and 8.5%, respectively (Substance Abuse and Mental Health Services Administration, 2011). Approximately 5–9% of Australian workers use alcohol during or immediately before commencing work. Such use has the potential to affect work performance (Australian Institute of Health and Welfare, 2008; Pidd et al., 2011). Alcohol use has also been associated with traffic accidents, criminal offences (Manning et al., 2013), premature mortality (Hoffmann and Larison, 1999), and injury (Ames et al., 1997; Dawson, 1994; Ramchand et al., 2009).

Employees' alcohol consumption also contributes to absenteeism (Bacharach et al., 2010; Holden et al., 2011; Jauregui and Schnall, 2009; Klingemann and Gmel, 2001; Pidd et al., 2006; Roche et al., 2008), reduced functioning (Ames et al., 1997; Holden et al., 2011; Mangione et al., 1999; Moore et al., 2012), disharmonious working relationships (Ames et al., 1997; Lehman and Simpson, 1992; Wang et al., 2010), employee turnover (Hoffmann and Larison, 1999), loss of productivity, and financial costs to employers (European Commission, 2011). High risk drinkers are approximately 22 times more likely to be absent from work due to their alcohol use compared to low risk drinkers (Roche et al., 2008). Workplace performance may also be impaired by presenteeism (Ames et al., 1997; Aronsson et al., 2000; Moore et al., 2012). Costs arising from presenteeism are estimated to be four times higher than that of absenteeism (Manning et al., 2013).

Workplace-related alcohol consumption has traditionally been considered an occupational health and safety issue with a focus on individual workers. As a consequence, alcohol testing is often undertaken, usually in 'safety sensitive' occupational roles such as train drivers, pilots, and mining industry employees (Pidd and Roche, 2014). More recently, workplace-related alcohol consumption is considered a whole-of-workplace issue. This encompasses employees' fitness for work as well as employers' duty of care to the 'whole of life' of employees, including potential workplace factors that may influence health. In order to adopt such an approach there is a need to identify risk factors that may contribute to harmful alcohol consumption patterns, so that such factors can be targeted by intervention and prevention strategies.

Variations in patterns of alcohol consumption and related harm across population groups are influenced by a variety of external and internal factors (Roche, 2001; Stimson et al., 2007). Factors external to the workplace include the individual worker's sociodemographic factors, and their family and community drinking norms (Ames et al., 2000; Ames and Janes, 1992; Frone and Brown, 2010). Within the workplace, socio-cultural norms associated with work-related alcohol use include the availability of alcohol, the quality and organisation of work, and drinking subcultures which create normative behaviours (such as peer approval/disapproval of alcohol-related behaviours). For example, more permissive management practices and norms can lead to more workplace drinking compared to less permissive management practices and norms (Ames et al., 2000).

Work-based factors are also known to be associated with work-related alcohol use (Allsop and Pidd, 2001; Battams et al., 2014; Pidd and Roche, 2008). Various workplace psychosocial factors (such as job satisfaction) have been associated with alcohol use (Ames et al., 2000; Macdonald et al., 1999). Physically stressful environments have also been identified as a factor that contributes to alcohol use and misuse (Frone, 1999, 2003). Key organisational factors that may influence risky drinking include isolated work, low supervision, low visibility of work, and a high level of employee mobility during working hours (Pidd and Roche, 2008). Informal and formal social control mechanisms also influence drinking (Pidd and Roche, 2008).

Prevalence of risky drinking is particularly high among workers in male-dominated industries (i.e. industries comprising ≥70% of male workers) (Australian Bureau of Statistics, 2008b). Internationally there is a higher than average prevalence of alcohol-related problems among workers in the construction (Hodgins et al., 2009; Macdonald and Wells, 1996; Mandell et al., 1992), utilities (Larson et al., 2007), manufacturing (Kim et al., 2008), agriculture (Harford et al., 1992; Mandell et al., 1992), and transportation (Macdonald and Wells, 1996) industries. In Australia, employees in male-dominated industries engage in substantially higher rates of alcohol consumption than the general population (Table 1).

As a result, male-dominated industries are particularly important to target in alcohol-related research. Furthermore, maledominated industries make substantial contributions to the

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