

**"She'll Be Right, Mate!": Occupational stress research in Australia**

Author

Brough, P, Raper, M, Spedding, J

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## 2 “She’ll Be Right, Mate!”

### Occupational Stress Research in Australia

*Paula Brough, Mitchell Raper,  
and Jason Spedding*

#### Introduction

In this chapter, we discuss key occupational stress empirical research conducted within Australia. First some context: Australia is the planet’s sixth-largest country after Russia, Canada, China, the United States of America, and Brazil – accounting for 5% of the world’s land area. Australia has a continental landmass of 7.692 million square kilometers and is the smallest continental landmass but the world’s largest island. Australia is about 32 times larger than the United Kingdom, 21 times larger than Japan, 14 times larger than France, and 2.5 times larger than India. Australia has a relatively small total population of approximately 26 million people and is ranked at 55th place in national population totals. Approximately half of the Australian population (13 million people) is of working age. The Gross Domestic Product (GDP) in Australia was approximately US\$1,432 billion in 2018, representing approximately 2.3% of the world economy.

Similar to many developed countries, occupational stress is a major public health problem in Australia, costing the economy up to AU\$15 billion per annum (Safe Work Australia, 2013). The physical and mental health of Australian employees is protected by the 2011 Work Health and Safety Act. Each of the eight Australian states and territories implements this Act with compensation legislation to support all workers’ who experience any work-related physical or psychological injury or illness. Approximately 7,800 Australians are compensated for work-related mental health conditions each year, and the vast majority (90%) of these mental disorder claims are attributed to mental stress (Safe Work Australia, 2015). These claims total approximately AU\$543 million and equate to approximately 6% of the annual number of workers’ compensation claims submitted. Thus, the number of submitted work-related mental health claims is relatively small, but their combined costs are substantial. Lost productivity specifically attributable to employee absenteeism, caused by the physical and mental health impacts of occupational stress, costs Australian organizations a total of approximately \$5 billion per annum (Price Waterhouse Coopers, 2014).

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The primary causes of occupational stress within Australia are unambiguous and are common to antecedents reported internationally, namely: excessive work demands, inadequate work resources, and exposure to psychologically unhealthy work environments predominately marked by interpersonal conflicts including “toxic leadership” (Brough, Drummond, & Biggs, 2018; Brough, O’Driscoll, Kalliath, Cooper, & Poelmans, 2009; Webster, Brough, & Daly, 2016). The occupations in Australia which report the highest levels of occupational stress, also reflect those in international reports, namely: public service occupations characterized by hierarchical, bureaucratic structures, involving high levels of interactions with the public, and which may also include experience with a high frequency of physical dangers. These occupations consist of military and emergency services workers, school teachers, and health and social welfare workers (Brough, Brown, & Biggs, 2016). Later in this chapter, we discuss the occupational stress antecedents which are unique to Australian workers – including indigenous culture, geographic distance, climate, and threats from wildlife. Next, we discuss the primary “flavors” of occupational stress research currently being conducted in Australia and represented in the scholarly international literature.

### **Key Areas of Australian Occupational Stress Research**

Similar to research being conducted internationally, in Australia, there are several researchers and their teams spread throughout the country focusing on specific areas of occupational stress research. Here, we provide an overview of four of these occupational stress research topics.

#### ***Occupational Stress Interventions***

How best to manage, reduce, and recover from occupational stress experiences underpins occupational stress intervention research. Professor Paula Brough and her team at Griffith University in Brisbane have worked with numerous “high-risk of stress” occupations to develop evidence-based stress management interventions (SMIs). For example, Biggs, Brough, and Barbour (2014a) described the implementation of a quasi-experimental SMI with police managers, focusing on improving their confidence in their personal people management skills. This SMI program was based on the theoretical framework of the job demands-resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), contained multiple components including both group and individual coaching sessions, and linked the police leaders’ skills to the well-being and performance of their direct reports (subordinates). Importantly, Biggs, Brough, and Barbour (2014a) noted how improving leadership abilities “produces significant improvements in some aspects of the

psychosocial work environment for the leader’s direct subordinates” (p. 60). Thus, how an employee’s experience of stress can be reduced by enhancing their leader’s behaviors. This research also demonstrated that high-quality SMI research could be conducted within a quasi-experimental research design, including both control and experimental groups and multiple pre- and post-assessments individually tracked over time (see also: Biggs, Brough, & Barbour, 2014c, 2014d; Brough & Biggs, 2015b). An extension of this work was also described by Webster et al. (2016) who demonstrated how the chronic experiences of a “toxic” manager can have serious health and performance consequences for their subordinates.

Professor Angela Martin and her team in Tasmania have also conducted pertinent SMI research focused on reducing levels of occupational stress experienced by small to medium-sized enterprise (SMEs) owners. Martin, Sanderson, Scott, and Brough (2009) also conducted their SMI via a quasi-experimental research design – comparing the impact of a self-administered versus telephone-coaching intervention, with a control group of SMEs managers. Martin and colleagues demonstrated the success of the telephone-coaching SMI component in reducing levels of psychological distress experiences reported by the SME managers (see also: Martin et al., 2015).

### *Job Demands, Job Resources, and Stressor Appraisals*

A second key area of occupational stress research in Australia focuses on the assessment of stress caused by different types of job demands. Australian occupational stress research has been instrumental in expanding our understanding of job demands, the categorization of these demands, and the employees’ interpretation (i.e., appraisal) of these demands. Research led by both Peter Hart in Melbourne and Paula Brough in Brisbane has demonstrated the importance of assessing both generic (global) job demands and occupational-specific job demands in order to provide accurate estimates of stress. Hart and his colleagues, for example, developed and validated measures of negative stressors (work hassles) and positive experiences (work uplifts) experienced by police officers (Hart, Wearing, & Headey, 1995). Hart and colleagues’ (Hart *et al.*, 1995) research is important for two reasons. First, this work demonstrated that both positive and negative “minor” work experiences independently contribute to an officer’s perceived quality of life. Second, Hart *et al.* (1995) demonstrated that organizational work demands, rather than operational experiences were more important in estimates of police officers’ well-being. Thus, organizational work demands such as managing bureaucratic red tape and correctly completing paperwork were rated as more onerous for the police officers’ long-term well-being, as compared to operational demands such as going on a raid or making an arrest.

Hart's work was also validated by Brough (Brough, 2004; Brough & Biggs, 2015a) who demonstrated that organizational work demands were stronger predictors of a police officer's mental ill-health levels over time, as compared to either generic job demands or traumatic work experiences. Brough (Brough & Biggs, 2010; Brough & Williams, 2007) also extended this work by developing a measure of occupational-specific job demands experienced by correctional (prison) officers. Brough and Williams (2007) recommended that assessing common work experiences of correctional officers, such as violence from offenders and offenders' deaths or escapes, in combination with generic measures of job demands were necessary to produce accurate estimates of correctional officers' mental health. In similar more recent work, Brough and Boase (2019), found that relaxing and cognitive restructuring were the two common stress management techniques employed by lawyers, reflecting international findings and relating to these two methods of stress management. Of particular interest, was how the use of cognitive restructuring had a similar impact upon levels of job satisfaction and work engagement, compared to the generic job demands experienced by this sample of lawyers. As seen above, Brough and Boase recommended the inclusion of lawyer-specific measures of occupational stress in addition to generic job demands, to better explore this reported use of cognitive restructuring within the stress process.

Research conducted by Brough and colleagues also considered the distinction between generic and specific job resources. One investigation assessed whether specific organizational resources (i.e., strategic alignment) assisted in promoting work engagement and reducing stress experiences for police officers, in comparison with generic job resources (i.e., social support and job control). Strategic alignment refers to an employee's perception and awareness of their organization's strategic priorities and how their daily tasks contribute to these priorities. Biggs *et al.* (2014d) not only found strategic alignment increased work engagement across multiple time lags, but these associations were stronger compared to the equivalent associations with both job control and social support. Raper, Brough, and Biggs (2019) extended this research and investigated the impact of strategic alignment with both work engagement and psychological strain over time. The results also indicated strategic alignment reduced psychological strain compared to generic job resources and highlighted the importance of assessing both specific and broad work resources

Similar research was conducted by Michelle Tuckey and colleagues in Adelaide. Tuckey and Hayward (2011) argued that occupational-specific emotional resources (i.e., camaraderie) may be more effective in reducing the negative outcomes of emotional demands experienced by firefighters, as compared to generic emotional resources. They demonstrated that camaraderie did indeed significantly reduce – moderated – levels of

burnout and psychological distress when emotional demands were high. This impact of camaraderie was stronger than the impact of generic emotional resources. These findings are also consistent with other Australian stress research calling for inclusions of organizational level resources in promoting positive workplace environments (e.g., Albrecht, 2012; Albrecht, Breidahl, & Marty, 2018).

Research conducted by Tuckey and colleagues has also focused on a different typology of job demands. Tuckey, Searle, Boyd, Winefield, and Winefield (2015) argued the challenge-hindrance framework (Cavanaugh, Boswell, Roehling, & Boudreau, 2000) does not adequately account for threat demands or cognitive appraisals. Instead, Tuckey *et al.* (2015) proposed the typology of a challenge-hindrancel-threat framework and argued that employees' exposure to these different demands impacts specific emotional outcomes including positive affect, anger, anxiety, and dedication. Furthermore, Searle and Auton (2015) noted the presence of inconsistent results reported in the challenge-hindrancel framework literature and argued the same job demands can be appraised as a challenge or a hindrance, or indeed as both, by employees. Their findings also indicated that challenge and hindrance cognitive appraisals accounted for significant proportions of unique variance in positive affect, anger, and venting (see also: Espedido & Searle, 2018; Espedido, Searle, & Griffin, 2019; Searle & Tuckey, 2017).

### *Psychosocial Safety Climate*

Recent research in occupational health has advanced knowledge regarding the organizational climates in which the stress-strain processes are nested. Maureen Dollard in Adelaide has advanced one such climate construct, the Psychosocial Safety Climate (PSC). PSC refers to the shared perceptions of policies, practices, and procedures endorsed by senior leaders within an organization designed to protect the psychological health of employees (Dollard & Bakker, 2010). Heightened levels of PSC have been directly linked to a range of organizational and individual benefits such as reduced bullying and exhaustion (Bond, Tuckey, & Dollard, 2010; Law, Dollard, Tuckey, & Dormann, 2011) and enhanced employee engagement (Dollard & Bakker, 2010). In addition, the direct benefits of maintaining positive PSC offer pertinent implications for extending existing theory, namely as a distal antecedent (an "upstream resource") within the job demands-resources model (Demerouti *et al.*, 2001).

In many organizations it is the remit of senior leaders to design and enact macro-level policies that balance both employee productivity and well-being, this balance is largely captured via the measurement of PSC. The PSC-12 (Hall, Dollard, & Coward, 2010) collates four subscales of

PSC into an aggregate climate construct. As organizational climates are inherently multilevel phenomena, this process of conceptualization and measurement is rife with difficulties (cf. Schneider, González-Morales, Ostroff, & West, 2017); however, contemporary research has begun to explore the benefits of maintaining supportive PSCs within organizations. One large scale population study explored the potential psychological risk factors facing Australian workplaces (Dollard *et al.*, 2012). Data collected from over 5,000 participants demonstrated the positive relationship between PSC and perceptions of organizational resources, productivity, and health outcomes, and negatively predicted job demands. PSC explained 13% of the variance in employee work engagement and up to 9% of the variance in employee self-reported health outcomes. The impacts of rural versus urban workplace demands were also assessed. Urban employees reported heightened job demands compared to their rural counterparts, albeit with less physical demands, less work-family conflict, and reported less mental and physical health issues.

In another investigation of the impact of PSC, Afsharian, Zadow, Dollard, Dormann, and Ziaian (2018) operationalized the standard deviation of PSC, to quantify the strength of climate exhibited within organizational work units. This technique of dispersion modeling (Chan, 1998), investigated the effects of aligned perceptions of climate. Afsharian *et al.* (2018) reported the direct effects of PSC were moderated by the perceived strength of the climate, such that employees in high PSC work units were more engaged in their work roles. Research exploring how climate strength may impact other group-level workplace dynamics remains a pertinent avenue for future scholars.

### ***Bullying and Workplace Incivility***

While workplace bullying and incivility are global workplace issues, Australian research has assisted researchers and practitioners to better understand these complex issues and has developed interventions to reduce these incidents. Approximately 10% of Australian employees experience these forms of workplace mistreatment (Safe Work Australia, 2016), corresponding with international estimations of between 10% and 15% (Zapf, Escartin, Einarsen, Hoel, & Vartia, 2011). Brough, Brown, and Biggs (2016) provided an overview of negative workplace behaviors commonly experienced within the criminal justice systems. They noted criminal justice (military, police, corrections, and law) organizations that contain strong hierarchical structures are more likely to adopt toxic work environments, as compared to organizations with lateral or flatter structures. Webster *et al.* (2016) also highlighted the issues of toxic management styles in creating unsafe workplaces by providing key recommendations for organizations and employees to be

more proactive in reporting and reducing these negative workplace behaviors.

Australian research has also focused on the job characteristics and personal resources which may precipitate bullying and harassment in the workplace. Tuckey, Chrisopoulos, and Dollard (2012) found hindrance job demands (organizational constraints, role conflict, ambiguity, and overload) resulted in aggressive behaviors when the demands outweighed the buffering effects of job resources. These findings were validated by Li, Chen, Tuckey, McLinton, and Dollard (2019), who argued that job design is one of the key prevention mechanisms to reduce workplace bullying. Job characteristics – including irregular work schedules and conflictual contact – increase job demands which, in turn, increase workplace bullying. Re-designing occupations to reduce stressful job characteristics and to enhance beneficial job characteristics is recommended to prevent the propagation of bullying work environments (Tuckey & Neall, 2014).

Australian research has also highlighted the influence of PSC on the occurrence of workplace bullying. Law *et al.* (2011), for example, demonstrated that the associations between bullying, employee psychological distress, and work engagement were reduced – moderated – by high levels of PSC. Similarly, Bond *et al.* (2010) demonstrated that high levels of PSC in police stations reduces the positive association between bullying and post-traumatic stress experienced by the police officers over time.

### **Australian-Specific Occupational Stress Research**

Australia’s isolation, size, climate, and proliferation of dangerous wildlife have also generated more nuanced fields of occupational stress research. In this section, we highlight three areas of stress research that are more specific to the Australian context.

#### ***Distance***

Australia has a very centralized population with approximately 68% of its population living within or close to a capital city, particularly along the eastern coast of Australia (Australian Bureau of Statistics, 2019). For those who live and work in rural inland areas of Australia, the vast distances involved can be a significant stressor. These remote communities also commonly contain fewer healthcare professionals per capita, resulting in poorer health outcomes as compared to Australia’s urban populations (Opie *et al.*, 2010). Consequently, the remote area nurses (RANs) working in these rural communities report high levels of occupational stress – characterized by high workloads, high turnover, less access to medical resources, and high levels of



workplace violence (Opie *et al.*, 2010). Lenthall *et al.* (2009) also found that the isolation reduced the social resources accessible to these RANs, resulting in reduced professional and personal boundaries (see also Opie, Dollard, Lenthall, & Knight, 2013).

A specific pattern of work referred to as fly-in fly-out (FIFO) employment, involves mining and construction workers commuting long distances to rural inland work sites by airplane, living and working on-site for several weeks and then taking another one or two weeks for a leave before they commute back to their homes and families. These elongated work-rest cycles represent new challenges to occupational health research and theory, with recent work building our understanding of how these processes impact both employee well-being and their family outcomes. Considine *et al.* (2017), for example, conducted a multisite study of FIFO coal workers and found these employees experienced additional stressors. Considine and colleagues reported that 39% of the FIFO workers in their sample reported moderate to very high levels of psychological distress, which is significantly higher than the 26% prevalence within a comparable community sample. They also reported that 46% of male FIFO workers had hazardous levels of alcohol use, which is almost twice as high as comparable community samples (Tynan *et al.*, 2017). Job-specific stressors for these FIFO workers included high levels of job insecurity and pursuing mining work purely for extrinsic financial reasons (Considine *et al.*, 2017).

Other research with FIFO workers has identified how misalignment between employee's needs and the organizational culture can attenuate workers' negative mental health outcomes (Morrow & Brough, 2019). Finally, utilizing ecological momentary assessment, Gardner, Alfrey, Vandelanotte, and Rebar (2018) found that during work trips, both the FIFO workers and their spouses/partners who remained at home reported reduced sleep quality, reduced exercise, and consumed more cigarettes, compared to when FIFO workers remained at home. Reducing the occupational stress experienced by these workers employed in remote communities is also a focus of other Australian research (e.g., Rickard *et al.*, 2012; Robinson, Peetz, Murray, Griffin, & Muurlink, 2017; Vojnovic, Michelson, Jackson, & Bahn, 2014).

### *Heat*

Australia is renowned for its extreme heat. Indeed, heat is the most dangerous environmental hazard in Australia, accounting for 55% of natural hazard-related deaths each year (Coates, Haynes, O'Brien, McAneney, & De Oliveira, 2014). Australia's hot and humid climates cause considerable risk and additional stress for employees who work

outside – particularly in construction, mining, farming, and emergency services. The impact of climate change has caused the Australian climate to recently become even warmer, with more frequent occurrences of extreme heat events across the country (Hanna, Kjellstrom, Bennett, & Dear, 2011). Rising numbers of very hot days (i.e., above 35 °C) places increasing strain on outdoor workers (Hanna *et al.*, 2011; Xiang, Bi, Pisaniello, Hansen, & Sullivan, 2013). Estimated costs to the Australian economy due to workers’ experiences of heat-related stress are approximately AU\$9 billion per annum, and this cost is increasing annually (Zander, Botzen, Oppermann, Kjellstrom, & Garnett, 2015). These costs have negative consequences for economic output. For example, during the 2002–2003 drought, GDP in Australia dropped by 1.0 percentage point (Australian Bureau of Statistics, 2006). As such, increasing research is focused on how to best relieve heat stress among the workforces, especially for workers who must work outside (Maté & Oosthuizen, 2012; Zander, Mathew, & Garnett, 2018).

Employers are very much aware of the occurrence of heat stress and commonly provide a variety of heat prevention measures to protect employees – including the provisions of cool drinking water on work-sites, heat stress training, shaded rest areas, protective hats, and cooling fans. However, Xiang, Hansen, Pisaniello, and Bi (2015) reported common barriers to the prevention of heat stress-related injuries, namely a lack of adequate training and awareness for employees, lack of management commitment, and low compliance rates (see also Jia, Rowlinson, & Ciccarelli, 2016; Singh, Hanna, & Kjellstrom, 2015). The negative impact of heat on the productivity and well-being of office employees has also been identified (Lamb & Kwok, 2016). Finally, Australia’s increasing prevalence of heatwaves and other extreme weather conditions (e.g., cyclones, floods, and bushfires) emphasize the importance of the appropriate provisions of work resources for both emergency and volunteer workers during their management of these natural disasters (Biggs *et al.*, 2014d).

### ***Dangerous Wildlife***

A discussion of Australian-specific stressors would not be complete without some mention of rather dangerous wildlife residents in this country. While visitors of Australia commonly anticipate encountering snakes, spiders, crocodiles, and sharks at every turn, most Australians actually experience relatively few encounters with these animals, and, indeed, typically experience more frequent encounters with the “cuddlier” part of Australian wildlife: koalas, kangaroos, wallabies, etc. Nevertheless, unique and considerable stress can be experienced by workers who do interact with dangerous Australian wildlife, although published research on this topic is scarce.

Whether the Australian animal encountered is cuddly or dangerous, risks arise from its capture and handling. Clearly, physical risks (e.g., being bitten) are the most prevalent and for animal professionals, these risks can be considered as a specific job demand. Thompson and Thompson (2007), for example, described the necessity of using appropriate types of traps for capturing snakes, spiders, and small mammals in Western Australia – for the physical safety of both the animal and the human worker. While Mirtschin (2006) provided more details of the dangers for herpetologists with the enviable task of extracting venom from Australia’s deadly snakes. Snake venom is required for the production of antivenoms. Mirtschin (2006) reported that most herpetologists’ deaths are caused by the highly venomous tiger snake and that, bizarrely, many herpetologists died after willingly being bitten – in order to demonstrate the effectiveness (or lack thereof) of the antivenom that they had produced.

Stevenson, Gowardman, Tozer, and Woods (2015) reported on the physical dangers for Australian park rangers from wildlife encounters – specifically via the transmission of Q-fever from both live and dead animals – including the disposal of deceased “road-kill” kangaroos and wallabies. Similarly, seal handlers may also be exposed to an arthritis infection called “*spaek* finger” arising from seal bites or the handling of seal skins (Taylor & Looke, 2008). While Australia is free of rabies, people working with bats may be exposed to a similar unpleasant and potentially fatal disease – the Australian bat lyssavirus – caused by bat bites (Dendle & Looke, 2008). Finally, Baynes-Rock (2019) provided an interesting account of the social connections occurring between crocodiles and their handlers at a Queensland crocodile farm. The physical safety of these farmworkers is a paramount concern; however, the strong attachments formed between the workers and their reptilian charges were surprising, and care is taken to ensure these attachments do not override the physical risks to these workers.

### Final Thoughts

Australian researchers collaborate with numerous international colleagues based in Europe and the United States. However, increasing collaboration is also occurring with researchers based in the Asia-Pacific region and this more “local” collaboration is likely to intensify in the future. The establishment of the multidisciplinary Asia Pacific Academy for Psychosocial Factors at Work in 2012 ([www.apapfaw.org](http://www.apapfaw.org)), is a significant boost to formalizing research collaborations between Australian researchers and equivalent scholars in Japan, China, Malaysia, South Korea, Indonesia, Hong Kong, Taiwan, and neighboring countries. Similar to its European and United States counterparts, this academy hosts annual conferences and workshops to

encourage research discussions and collaborations and has produced output highlighting research collaborations occurring in this region (Brough, Dollard, & Tuckey, 2014; Dollard, Shimazu, Bin Nordin, Brough, & Tuckey, 2014). Both the membership of this Academy and the collaboration it fosters continue to grow.

Occupational stress research in Australia remains a productive and pertinent growth area of organizational psychology and is unlikely to diminish in the near future. Indeed, with continual technological advances, it is likely that increased interest will be placed on web-based and smartphone application-based stress management developments. Such developments will be of significant value to workers particularly based in rural areas, where vast distances isolate them from readily accessing other forms of assistance (e.g., Brew, Inder, Allen, Thomas, & Kelly, 2016). The concentration of the majority of the Australian population in coastal cities and towns is also predicted to increase, with Australian projected population estimates of up to 42.5 million people by 2056 and 62.2 million people by 2101 (Treasury, 2010). This population growth will require more public services and thus, more public servants. Unless working conditions for these workers are significantly changed, we can anticipate a steady increase in occupational stress experiences reported by these workers.

To conclude, in this chapter, we have discussed the key foci of occupational stress research being conducted in Australia and identified the common stressors experienced by Australian workers, including stressors that are somewhat unique to Australia – such as dangerous wildlife encounters, the heat, and the vast distances. We have highlighted the growth of research collaborations with our Asia-Pacific neighbors, and how the projected population growth will ensure a continuing need for innovative and impactful Australian occupational stress research.

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