



Research & Development Report

Managing Workplace Stress: Psychosocial Hazard Risk Profiles in Public and Private Sector Australia

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Abstract

The purpose of the present research was to examine and compare the perceptions of private and public sector employees on key dimensions of workplace stress in an Australian context. The sample included 664 male ($n = 234$) and female ($n = 430$) Queensland workers from the public ($n = 559$) and private ($n = 105$) sectors, across both large and small organisations and from a range of job roles. Participants completed the Health and Safety Executive (HSE) Indicator Tool as a measure of the six dimensions of workplace stress across the two domains of Job Content (Demands, Control and Support) and Job Context (Role, Relationships and Change). Results indicated that private sector employees rated their employers as being significantly more effective than public sector employees, in managing workplace stress across all the dimensions other than Role, while employees in both sectors rated their employers as less effective in managing Job Content stressors than Job Context stressors. Compared with normative benchmarks, both public and private sector employees also reported risks of stress associated with Relationships and Role. Implications of these findings and suggestions for future research were discussed.

Introduction

Rapid advances in technology and accelerated international trade and competition, have intensified organisational pressures to maximize profit while minimising costs. This has resulted in increasing demand for higher productivity and greater accountability in the public sector, and greater profitability in the private sector. Current Australian workplace environments in both sectors have been increasingly characterised by intensified pressure on employees to perform at consistently higher levels, with longer hours, reduced staff numbers, insecure employment patterns and employer empowerment (Caulfield, Chang, Dollard, & Elshaug, 2004; Dollard, 2006; Dollard & Knott, 2004; Polanyi & Tompa, 2004; Stebbins, Thatcher, & King, 2005). All these factors have been identified as contributing to the creation of a stressful work environment and increased risk of psychological problems. Stress is now recognized in health and safety legislation as a workplace hazard, namely a 'psychosocial hazard' (Dollard; Dollard & Walsh, 1999; Rydstedt, Ferrie, & Head, 2006), making workplace stress and employee wellbeing an area of growing importance for organisations, regulators, employees and the community as a whole (Stebbins et al.).

A substantial evidence base has linked chronic stress in the workplace with a range of negative physical, psychological and social consequences for employees, including depression, anxiety, burnout, increased alcohol use, smoking, aggression, anger, violence, road rage, poor family interactions, declining marital cohesion (Caulfield et al., 2004; Dollard, 2006; Dollard & Knott, 2004; Ettner & Grzywacz, 2001; Senol-Durak, Durak, & Gencoz, 2006), as well as cardiovascular disease (Kinman & Jones, 2005) and hippocampal degradation (Dollard). From an organisational perspective, workplace stress has also been associated with high staff turnover and absenteeism, increased industrial accidents and insurance premiums, decreased job performance, loss of productivity and lowered morale (De Bruin & Taylor, 2006; Caulfield et al.; Kennedy, 2004; Senol-Durak et al.).

Statistical, legislative and medico-legal evidence suggests that workplace stress is an escalating problem. Statistics on workplace stress show most Australian States have experienced a rising number of stress related Workers' Compensation claims each year (Caulfield et al., 2004), increasing nationally by 83%, from 4585 in 1996–97 to 8410 in 2003–04 (The Office of the Australian Safety and Compensation Council, 2007). In addition, cost per claim is generally much higher than for physical injuries, with psychological stress claims in 2005–2006 accounting for only 5% of all claims, but nearly 21% of total claim costs (Comcare, 2006). Similarly, in Queensland, while

psychological and psychiatric injuries accounted for only 2.9% of claims (in 2005-2006) they represented 8.2% of claim payments with an average cost of \$28,617 and a total cost of \$39 million (Q-Comp: The Workers' Compensation Regulatory Authority, 2007). The direct cost of stress related claims in Australia overall is estimated at \$200 million every year – approximately four times as much as claims for physical injury (National Occupational Health and Safety Commission, 2003; Office of Public Service Merit and Equity, 2006; Stebbins, 2003).

Further to the statutory system, pending factual and medico-legal evidence, workers may also make a claim at common law against their employer. In this instance, negligence must be proven, such as in the public sector case of Robert Hergarty, a former Queensland Ambulance Officer, awarded \$569,653 in damages (Queensland Coalition, 2007), and in the private sector case of Mr Naidu, a former security guard, awarded \$1.9 million (Blake Dawson Waldron Lawyers, 2006).

Regulators have also been increasingly focused on workplace stress with individual States and Territories creating and enforcing workplace health and safety legislation (such as the *Queensland Workplace Health and Safety Act 1995*). The Acts document the requirements for maintaining safe and healthy work environments. These requirements are commonly known as the 'Duty of Care', which is the responsibility of employers to do everything practical within reason to protect the health and safety of their employees which includes protection from workplace stress hazards which may cause psychological or psychiatric injury (Australian Chamber of Commerce and Industry, 2002; National Occupational Health and Safety Commission, 1997). This combined regulatory, statistical and medico-legal evidence provides strong motivation for further studies into the factors precipitating workplace stress. The purpose of the current study is to examine and compare perspectives of public and private sector employees on dimensions of workplace stress in an Australian context.

Workplace Stress: Theory and Definition

A logical starting point in the study of workplace stress is to provide a clear, accurate definition of the concept of workplace stress. However, this is less simple than it appears. Researchers and academics have not yet reached a consensus on the definition of workplace stress (Hart & Cooper, 2001). Stress as a construct, continues to be given varying explanations by a range of parties, including academics, lay persons and policy makers (Kinman & Jones, 2005; Lewig & Dollard, 2003). This has resulted in an abundance of overlapping theories and approaches to the concept, at both a macro level, examining multiple, broad aspects of the stress process, such as personality, work environment and physiology, and at a micro level, focusing on specific factors of stress, such as work demands (Hart & Cooper).

Despite the ambiguity surrounding the meaning of workplace stress, research on the topic continues to expand (Kinman & Jones, 2005), with stress theory evolving over the last few decades from more basic conceptions of the topic to highly complex frameworks. The pioneering framework, the stressor and strain approach, theorized that work stress caused individual strain and ill health. This framework has been criticised for an overly simplistic representation of stress (Hart & Cooper, 2001). In response to these criticisms, the Psychological Model was developed. This model views stress in terms of a dynamic, 'two-way' interaction between the person and their work environment (Cox, 1993), and from this model more recent theoretical modeling emerged, namely interactional and transactional theories of workplace stress (Cox; Hart & Cooper).

Interactional theories concentrate on structural factors of a person's relationship with their workplace. For example French, Caplan and van Harrison's (1982) Person × Environment Fit theory proposes that stress is likely to occur when there is a lack of fit between the employee and their work environment, with regard to whether the employee's beliefs and skills fit the demands of the job and whether the job satisfies the employee's needs. Transactional theories focus more on the psychological processes underlying the relationship between a person and their workplace, in particular the role of appraisal and coping (Cox, 1993). This approach forms the underpinnings of numerous occupational stress theories (Hart & Cooper, 2001). Two such models, Demand-Control and Effort Reward Imbalance, have prevailed in the stress research. Karasek's (1979) Demand-

Control Model, views stress as resulting from high work demands and low worker control (De Bruin & Taylor, 2006), with more recent elaborations of the theory (the Job Demand-Control/Support Model) proposing that workers with high demands, low control and low support are at greatest risk of stress (MacKay, Cousins, Kelly, Lee, & McCaig, 2004; Van Der Doef & Maes, 1999). Siegrist's (1996) Effort-Reward Imbalance Model, explains stress as an imbalance between the perceived effort required from the worker and perceived reward (Caulfield et al., 2004; Polanyi & Tompa, 2004). Both models have received empirical support, which some researchers describe as modest (Dollard & Knott, 2004) and others as strong (Rydstedt et al., 2006). They have also been criticised on the basis that they focus on limited variables (Cotton, 2003; Polanyi & Tompa) and their measures may not be valid across differing occupations (Lewig & Dollard, 2003).

Responding to evidence suggesting that combining the models may enhance overall explanatory power, the Job Demands – Resources Model was developed (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). This model, coupling concepts of the two previous models, predicts that workers experiencing high job demands and low resource levels (including lack of control, support and rewards) are likely to experience the greatest amounts of work stress. Such merging of theories is consistent with recent theoretical developments proposing that stress is not located within any one variable, but within a dynamic interplay of an extensive system of variables. This is reflected in current complex frameworks such as the Organisational Health framework, which takes into account numerous factors potentially affecting the stress process (Hart & Cooper, 2001).

In summary, there is no fast, simple answer to the question 'What is workplace stress?' However, for the purposes of the present study, stress is defined as the harmful psychological and physiological response which occurs when there is a chronic imbalance between workplace requirements/environments and worker perceptions of their abilities, coping capacities and needs (De Bruin & Taylor, 2006; Dollard & Knott, 2004; Senol-Durak et al., 2006). Furthermore, given the current dominant view that workplace stress and its related negative effects are more strongly associated with aspects of the organisational environment than with personal or biographical factors, such as personality (Caulfield et al., 2004; Dollard & Knott), the present study will operationalise workplace stress as dimensions of the workplace environment associated in literature (e.g., Health and Safety Executive, 2004b) with stress, specifically demands, control, support, role, relationships and change.

Workplace Stress in the Public and Private Sector

For the purposes of the current study, public sector organisations are considered government owned and operated and primarily focused on administration of essential services and control and maintenance of social and economic conditions. In contrast, private sector organisations are considered either profit making enterprises or community service groups operating independently from the government (Macklin, Smith, & Dollard, 2006). In Australia, approximately 20% of workers are employed in the public sector and 80% in the private sector. Yet Australian media has traditionally focussed on stress experienced by public sector employees. This has fuelled a common belief that stress is a public sector issue (Lewig & Dollard, 2001; Macklin et al., 2006). The inclusion of many 'high-risk occupations' (e.g., correctional services, policing, fire services, teachers, and health care workers) within the public sector has been indicated as a possible reason behind this focus, along with the higher incidence of Workers' Compensation claims for psychological injury by public sector workers compared to private sector workers in some Australian States, notably South Australia (Dollard & Walsh, 1999; Dollard, Winefield, & Winefield, 1999; Mayhew & Chappell, 2002).

Dollard and Walsh (1999) explored other possible factors underlying the reported trend of higher stress claims in the public sector and provided a range of explanations, including that public sector workers may be particularly affected by organisational changes, such as downsizing, and also that they may feel less apprehensive about making claims, due to factors such as higher levels of union organisation and different legislation and philosophies underlying the sectors, which results in less fear of losing their jobs.

The researchers concluded that although factors such as these may contribute to higher rates of psychiatric injury compensation claims by public sector workers (in South Australia), it does not mean that public sector work environments are inherently more stressful than private sector workplaces. Indeed, while the trend of higher incidence of stress claims by public sector workers in South Australia was mirrored in Western Australia, in the Northern Territory, stress claims across the sectors were equal, and in Queensland, private sector workers made twice as many stress claims as public sector workers, a stable trend since 1992/93 (Dollard & Walsh, 1999). More recent Queensland statistics indicate that from 2000-2002, psychological stress claims were higher for private sector employees than for public sector (state government) employees. From 2002-2005 rates were marginally higher for public sector workers, yet in 2005-2006 private sector workers made almost 200 more claims than public sector employees (S. Robinson, personal communication, August 1, 2007).

These mixed results suggest that workplace stress is equally, if not more, problematic, for private sector workers than for public sector workers. This conclusion was supported by Macklin et al. (2006), who found no difference in risk of work stress between employees in the private and public sector from their South Australian sample. The researchers used their findings to challenge further the common belief that workplace stress is largely a public sector issue. They also questioned using compensation rates as an accurate representation of workplace stress, suggesting that an improved measure of the problem would be direct comparison of actual work environments, to compare actual levels of stress between the private and public sector.

However, such comparative evidence regarding patterns of workplace stress between public and private sector organisations is sparse in the current literature. An extensive search of the databases PsycARTICLES, PsycBOOKS, PsycEXTRA and PsycINFO (via EBSCOhost) conducted by the researchers on 11/06/2006, 27/05/2007 and 05/08/2007, using key terms 'stress' and 'private and public sector', and using a 'linked full text' specification, yielded only one relevant result which was an Australian study by Macklin et al. (2006). Similarly, research examining the experience of private sector workers regarding workplace stress has been largely ignored in academic literature, with the majority of studies focusing on public sector employees (Caulfield et al., 2004).

Limited information on private sector employees and the lack of comparative research between the public and private sectors restricts specificity of knowledge of psychosocial risks in these industry sectors, and is potentially highly problematic in terms of the provision of adequate and specific risk management and stress prevention. More specifically, since employees in the two sectors work within different legislative and ideological frameworks, and differing business performance and operational systems, it is likely that their experience of workplace stress may differ (Dollard & Walsh, 1999). Yet, without first comparing these actual work environments, it is difficult to determine how they differ or to what extent.

Without knowledge of what specific stressors or risks are present within the two sectors, attempts to design and implement successful stress prevention strategies may be compromised from the outset. The paucity of published research into interventions to address workplace stress in Australia makes it difficult to verify the presence and effectiveness of such intervention in either the public or private sector. However, the rising number of Workers' Compensation claims suggests that current stress management programs and interventions, if implemented at all, are inadequate (Caulfield et al., 2004).

A proposed method to improve intervention relevance and efficiency involves identification of risks or stressors at a local workplace level and development of targeted stress interventions based on identified risks. The Working Model (Arsenault & Dolan, 1983; Dolan & Arsenault, 1979) suggested that stressors are unique to each organisation and workplace factors only become stressors if individual employees perceive them as a threat. This highlights the importance of examining worker perceptions when assessing stress within specific organisations.

Accordingly, the first aim of the current study was to examine and compare the perceptions of workers in the private and public sector on stressors within their workplace environment.

Operationalising Workplace Stress: Dimensions of Stress in the Work Environment

In attempting to address the escalating incidence and cost of occupational stress in the United Kingdom, the Health and Safety Executive (HSE) identified six key dimensions of organisational stress. An accumulation of evidence indicates that these six stressors associated with the work environment can negatively impact employee wellbeing, regardless of organisation type or size (MacKay et al., 2004). The HSE separated the stressors into the domains of Job Content and Job Context. Job Content includes Demands, Control and Support (peer support and managerial support), while Job Context consists of Role, Relationships and Change (MacKay et al.).

Job content (demands, control and support). The workplace dimension, 'Demands', encapsulates worker interaction with workload, work patterns and work environment, while the dimension of 'Control' involves how much influence workers have on how they perform their duties, including aspects such as their work pace (Cousins et al., 2004). In a review of 20 years of research on Karasek's (1979) Demands-Control Model (and its variants), Van Der Doef and Maes (1999) reported support for the hypothesis that workers in high Demand, low Control (and low Support) jobs experienced the poorest wellbeing. Methodological limitations such as cross-sectional design limiting causal inference, gender specific samples, and narrow occupational grouping limiting generalisability of findings have been sources of criticism in the demand-control (D-C) interaction literature (MacKay et al., 2004). For example, after reanalysing the studies reviewed by Van Der Doef and Maes, Taris (2006) found that less than half of the 63 studies reviewed mentioned the D-C interaction, as opposed to the effects of Demand and Control alone (the main effect). Of these, just nine provided solid support for the interaction effect. Taris concluded that, while the D-C interaction does not appear supported by current empirical evidence, the dimensions of Demands and Control by themselves, specifically high Demand and Low Control, have been found to be significantly associated with work stress and ill health – a finding supported by several studies (e.g., Carayon & Zijlstra, 1999; Parker, Axtell, & Turner, 2001; Smulders & Nijhuis, 1999).

'Support' is the last stressor classified under Job Content and, in this context, refers to the amount of adequate encouragement, feedback and resources provided to the worker by their organisation, management and colleagues (Cousins et al., 2004). Ganster, Fusilier and Mayes (1986) have concluded that social support, in particular from supervisors, can positively impact the physical and psychological wellbeing of workers. In a subsequent study, Frese (1999) found that high social support lessens the negative impact of stress on psychological functioning. Though the longitudinal design strengthened the conclusion of this study, the sample was limited to male blue-collar workers in the steel and automotive industries, limiting generalisability across sectors and genders.

In a meta-analysis of 68 studies, Viswesvaran, Sanchez and Fisher (1999) concluded, similarly, that social support was associated with a reduction of workers' experience of stress. This conclusion was supported by the review of Rick, Thomson, Briner, O'Reagan and Daniels (2002) who found that social support was a significant predictor of psychological health, with low support implicated in increased psychiatric symptoms, worker stress and absenteeism. More recently, in a longitudinal study, Stetz, Stetz and Bliese (2006) found that high levels of employee self-efficacy significantly strengthened positive effects of social support on the experience of stress. However, all participants in this study were military police soldiers, the majority being white, male and married, again limiting generalisability of conclusions.

Job context (relationships, role and change). The dimension, 'Relationships', examines the interactions of workers with colleagues, subordinates and superiors, and includes issues of bullying and workplace violence (Cousins et al., 2004). Research indicates that working relationships can be a significant source of both stress and support. Growing evidence suggests that supportive leadership and a positive work-team environment are essential factors for boosting worker resilience to stress (Ford, 2004). Conversely, poor relationships at work have been implicated as a major contributor to workplace stress (De Bruin & Taylor, 2006), especially in the cases of psychiatric injury due to bullying and workplace violence (Cousins et al., 2004). A United Kingdom general population study ($N = 1,800$) found that workers who reported experiencing bullying were significantly more likely to

report high levels of work stress in a 12-month period (Smith, Johal, Wadsworth, Davey-Smith, & Peters, 2000). The relationship between abusive supervision styles and bullying from colleagues and increased distress and poor psychological outcomes has been confirmed by numerous studies (e.g., Agervold & Mikkelsen, 2004; Beswick, Gore, & Palferman, 2006; Tepper, 2000). In short, the combined empirical evidence does suggest that poor relationships at work are detrimental to worker wellbeing by increasing individual psychological distress.

The workplace dimension 'Role' relates to whether workers understand their role within their organisation and is associated with role ambiguity and role conflict. Role ambiguity refers to unclear or constantly changing specifications regarding expectations and duties defining an individual's job, while role conflict refers to incompatible demands on a worker (Cousins et al., 2004; De Bruin & Taylor, 2006). Recent literature indicates a persistent link between both role ambiguity and role conflict and high levels of stress (Cousins et al., 2004; Senol-Durak et al., 2006). According to Caulfield et al. (2004), the greater degree of role ambiguity currently experienced in organisations has resulted largely from change, which is the final stressor in the domain of job context.

The dimension 'Change' refers to the association between work stress and poorly managed organisational change (MacKay et al., 2004). When organisational change is implemented without appropriate resources or support, it can result in feelings of job insecurity, increased emotional demands and intensification of workload. This, in turn, can lead to increased distress, with further repercussions seen in work/home strain and increased psychological and physical ill health (Ford, 2004; Kennedy, 2001; MacKay et al.).

Despite methodological limitations preventing causal inferences in some of the reviewed studies, the combined empirical evidence clearly suggests that these six dimensions across the two domains of the organisational environment are influential in the experience of workplace stress, associated with increased mental and physical ill health. It should also be noted that previous research has highlighted the importance of distinguishing between job content and job context stressors in understanding organisational stress (Arsenault & Dolan, 1983; Evans & Coman, 1993). Further, it has been suggested that the three stressors in the domain of Job Content have a more substantial evidence base for stress-related ill-health effects than the three stressors in the domain of Job Context (MacKay et al., 2004).

The second aim of the present study was to test this proposition, examining whether workers in both the public and private sector, using a mixed gender sample, across a range of organisations in terms of both size and sector, actually do perceive Job Content stressors as more problematic than Job Context stressors.

Current Study: Hypotheses and Aims

In summary, the reviewed literature and statistical evidence indicates, on average, higher rates of Workers' Compensation stress claims for private sector workers in Queensland. It also suggests that aspects of Job Content have a more substantial evidence base linking them with stress than aspects of Job Context. Based on this evidence it is hypothesised that:

Hypothesis 1: Private sector workers will give their organisations significantly lower ratings for effectiveness in managing workplace stress over the six stressors than public sector workers.

Hypothesis 2: Of the six stressors to be measured, workers in both sectors will rate their organisations lower for effectiveness in managing workplace stress on the factors concerned with Job Content (Demands, Control and Support) than on those of Job Context (Role, Relationships and Change).

A third aim will be to compare the public and private sector samples against normative benchmarks, to examine for any sector-specific risk profiles and similarities and differences in areas of workplace stress hazards. Given the limited empirical data relevant to comparisons between public and private sector groups against benchmarks, no specific predictions are made regarding this factor.

Method

Participants

Participants in the current study included 664 male ($n = 234$) and female ($n = 430$) Queensland workers from the public ($n = 559$) and private ($n = 105$) sector whose workplaces were undergoing organisational health reviews carried out by an Australian consulting firm. The organisations engaged in this process after requesting an organisational health review regarding the status of their workplace environment during the period of January 2005 to July 2007. Due to issues of confidentiality, no demographics of participants linked to specific questionnaires were made available, although the numbers of male and female participants in each workplace were known; thus a broad description of the sample follows. The 27 organisations involved in the study included 8 private and 19 public sector workplaces in organisations with from 15 to 60,000 staff. These workplaces included branches of state government departments, health care providers, proprietary limited companies, legal institutions, churches and charity organisations. Individual participants included employees across a range of semi-skilled and professional work groups, including hospitality workers, administrative staff, managers, senior executives, health care professionals and specialists. In each of the reviewed samples for which the data was drawn there was a 100% response rate.

Materials and Design

Independent measure. The study was quasi-experimental in that type of workplace, either public or private sector, determined the level of the independent variable, Sector, at which participants were included. Information regarding gender and specific workgroup size are displayed in Table 1.

Table 1

Summary of Relevant Organisation and Employee Information

		Combined (n)	Public Sector (n)	Private Sector (n)
Gender:	Male	234	192	42
	Female	430	367	63
Number of staff in each review (range)		5 – 54	5 – 54	8 – 23
Organisation size (total staff)		15 – 60,000	500 – 60,000	15 - 14000

Dependent measure. In this study, the Health and Safety Executive (HSE) Indicator Tool (Cousins et al., 2004; MacKay et al., 2004) was used as the measure of workplace stress. Self-report questionnaires have been found to be valid measure of stress (Fairbrother & Warn, 2003). The HSE Indicator Tool is a 35-item self-report questionnaire relating to the six key workplace stressors. These are divided between two domains, Job Content and Job Context, and further separated into seven subscales across the six identified dimensions (Demand, Control, Support [managerial support and peer support] Role, Relationships and Change).

All items use a 5-point Likert type scale, either a frequency scale from Never (1) to Always (5) or an agreement scale from Strongly Disagree (1) to Strongly Agree (5). Overall, lower scores indicate poorer performance or potential problem areas, however, some items are reverse coded (Health and Safety Executive, 2004b).

The statistical properties of the Tool are described in Cousins et al. (2004) and MacKay et al. (2004). Cronbach's alphas of the subscales range from .78 to .89. In the current study Cronbach's alphas included Demand (0.84), Control (0.79), Managerial Support (0.89), Peer Support (0.80), Role (0.81), Relationship (0.81), and Change (0.80), suggesting sufficient internal consistency of each subscale. An accompanying excel program, the HSE Analysis Tool, was developed to analyse results of HSE Indicator Tool. The Analysis Tool includes benchmarks, based on a survey of UK workers regarding workplace stress ($N = 1727$), indicating that employees consider their organisation to be functioning either 'very well' (above 80th percentile), 'good' (between 50-80th percentile), with a 'clear need for improvement' (between 20-50th percentile) or with 'urgent action' needed to address the situation (below 20th percentile) (Health and Safety Executive, 2004b).

Procedure

In the initial stages of the organisational health reviews of the participating organisations, consultants distributed the HSE Indicator Tool, with a cover sheet explaining the purpose of the survey, and assuring confidentiality. The completed surveys were entered into the statistical program SPSS version 14.0 for analysis. Data was also entered into the HSE Analysis Tool software for benchmark comparisons.

Results

Data Cleaning and Assumptions

Before commencing analysis, data was examined for accuracy and missing data. It was found that there was less than 1% missing on any variable and no pattern was indicated for the missing data, which suggested a random distribution. Examination of box plots of each subscale revealed no univariate outliers. Similarly, no multivariate outliers were found using Mahalanobis Distance. Evaluation of normal probability plots found no severe departures from normality. Initial assessment of the data, therefore, determined that it met the required assumptions to support the analyses.

Aim 1 & Hypothesis 1

To test if public sector employees rate their organisations significantly lower for effectiveness in managing workplace stress than private sector employees, a two-group between subjects multivariate analysis of variance (MANOVA) was conducted on the seven dependent variable subscales, Demands, Control, Managerial Support, Peer Support, Role, Relationships and Change. The independent variable was 'Sector' of participant's organisation and was separated into public and private. Prior to assessing multivariate significance, Bartlett's test of Sphericity was examined and found to be significant (approximate $\chi^2 = 1497.46$, $p < .001$), indicating adequate correlation between the dependent subscales to proceed with the analysis.

Box's M test was also examined. This was also significant (Box's $M = 99.57$, $p < .001$), indicating a violation of the assumption of homoscedasticity. Despite suggestions in the literature that Box's M test is too strict with large sample sizes (Tabachnick & Fidell, 2001), it was still decided to assess multivariate significance using Pillai-Bartlett trace rather than Wilks Lambda, as Pillai-Bartlett trace tends to be more robust to such violations. Examination of multivariate significance using Pillai-Bartlett trace found a significant difference between the public and private sectors on the dependent variable measuring workplace stress, $F(7, 651) = 13.14$, $p < .001$, $\eta^2 = .12$.

Table 2 displays the results of Levene's Test of equality of error variances, testing the assumption of univariate homogeneity of variance for each dependent variable.

Table 2

Results of Levene's Test of Equality of Error Variances

Stressor	$F(1,657)$
Demand	1.29
Control	6.71*

Managerial Support	6.92*
Peer Support	0.26
Role	0.79
Relationships	3.60
Change	0.71

* $p < .01$

As can be seen in Table 2, Levene's Test is statistically significant for two of the seven subscales Control, $F(1, 657) = 6.71, p = .01$ and Managerial Support, $F(1, 657) = 6.92, p = .01$. This indicates that the assumption of equal variance has been violated in these two cases. Due to both this univariate heterogeneity of variance, and the multivariate heterogeneity, as evidenced by the significant Box's M Test, as well as the uneven cell sizes, follow up tests were conducted using an independent t -test with weighted pooled error (equal variance not assumed) instead of univariate F (T. Obst, personal communication, August 21, 2007).

Table 3 displays the mean scores and standard deviations of the subscales from this analysis. As can be seen from Table 3, mean scores of public sector workers are consistently lower than mean scores for private sector workers, suggesting that public sector employees, on average, have rated their organisations as less effective in managing stress across all subscales. The independent t -tests were examined to determine if this difference between the sectors was significant. Using a Bonferroni adjustment of 0.01, the independent t -tests indicate that these differences between the sectors were significant for all stressors but Role.

Table 3

Mean Employee Rating on their Organisations' Effectiveness in Managing Workplace Stressors

Stressor	t (df)	Public Sector	Private Sector
		($n = 558$)	($n = 105$)
		M (SD)	M (SD)
Demand	-3.21**	3.33 (.68)	3.54 (.62)
Control	-7.14***	3.50 (.73)	3.95 (.56)
Managerial support	-6.10***	3.33 (.93)	3.85 (.77)
Peer support	-3.92***	3.76 (.68)	4.06 (.71)
Role	0.55	4.20 (.65)	4.23 (.62)

Relationships	-9.16***	3.39 (.82)	4.12 (.73)
Change	-4.89***	3.03 (.92)	3.48 (.86)

** $p < .01$. *** $p < .001$

Note. Lower values represent less efficiency in managing workplace stressors.

Aim 2 & Hypothesis 2

Hypothesis 2 predicted that employees in both sectors would rate their employers as less effective in managing workplace stress on factors concerned with Job Content (Demands, Control and Support) than with Job Context (Role, Relationships and Change). A paired samples t -test was conducted to test this hypothesis. Table 4 displays mean scores and standard deviations of this analysis.

Table 4

Overall Mean Employee Rating on Organisational Effectiveness in Managing Workplace Stressors, divided between Job Content and Job Context (N = 663)

Domain	<i>M</i>	<i>SD</i>
Job Content	3.54	0.54
Job Context	3.60	0.62

Note. Lower values represent less efficiency in managing workplace stressors.

As can be seen in Table 4, on average, employees in both sectors rated their employers as less effective in managing stress on the factors associated with Job Content than Job Context. On examination of the t -test, the difference between the two domains of stressors was found to be significant, $t(662) = -3.72$, $p < .001$, thus supporting hypothesis 2.

Aim 3: Comparison of Sector Groups against Benchmarks

The third aim was to compare private and public sector samples against normative benchmarks to examine for any sector-specific risks, and similarities and differences in areas of workplace stress hazards. Results of the analyses are displayed in Figure 1. As can be seen in Figure 1, the result of the comparison between the public sector data set and the normative sample reveal workplace stress hazards associated with the subscales of Role and Relationships. Public sector employees in the current sample have, on average, rated their organisations comparatively with the bottom 20% of participants in the United Kingdom survey (Health and Safety Executive, 2004b). For the subscales Demands, Peer Support, Managerial Support and Change, public sector employees have rated their organisations as below average. The subscale Control has been rated as above average. Regarding the subscale of Relationships, bullying and harassment and friction or anger between colleagues were identified as being particularly problematic, with 158 of the 559 public sector employees in the sample (28%) indicating that they were always, often or sometimes bullied.

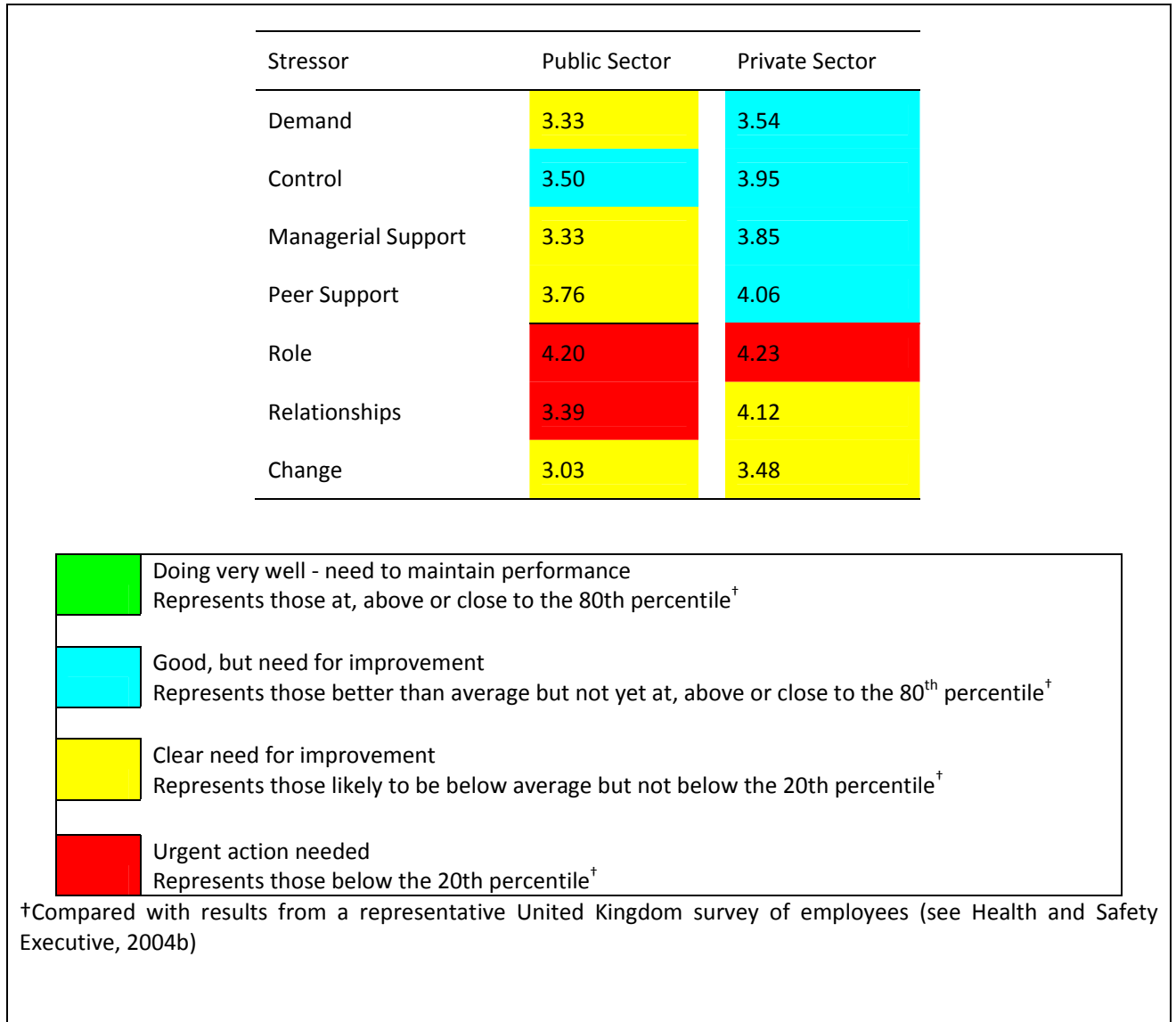


Figure 1. Comparison of Public and Private Sector Data Against Normative Sample

. Discussion

The purpose of the present research was to contribute to the empirical understanding of the dimensions of workplace stress in public and private sector organisations in Australia. It used a comprehensive broad sample, reflecting a range of organisations and worker groups in terms of size, industry sector and gender. Specifically, the current study examined and compared perspectives of private and public sector employees on key dimensions of workplace stress in an Australian context.

Aim 1. Dimensions of Workplace Stress: Private versus Public Sector Employees

The present study aimed, firstly, to investigate and contrast perceptions of public sector employees and private sector employees for differences in their experience of stress in the workplace. The analyses found that private sector workers rated their organisations significantly lower on effectiveness in managing workplace stress across all dimensions, including Role.

This suggests that compared with private sector employees, public sector workers feel they are less able to cope with the demands of their job; have less say in how they perform their job;

receive less adequate information, assistance and support from their peers and superiors; are more often subjected to unacceptable relationship behaviours such as harassment and bullying, and are less often consulted and assisted during organisational change. While the direction of mean scores indicated that workers in the public sector found the stressor, Role, more problematic than those in the private sector, this difference was not significant, suggesting similar perceptions regarding understanding of role within the workplace. The results, therefore, do not support the first hypothesis, that workers in the private sector would give their organisations significantly lower ratings over the six stressors than workers in the public sector. This result is comparable to that of Macklin et al. (2006), who found no difference between the sectors on their measures of stress, even though South Australian Workers' Compensation statistics indicated public sector employees had a higher stress claim rate than private sector employees. One reason for this disparity may be that not everyone experiencing stress lodges a Workers' Compensation claim, and studies of actual workplace environments include all employees. Since the current study was the first in Queensland, and only one of very few nationally and internationally, to compare workplace stress between the sectors, examining all employees within sub groups, not just those with work related compensation claims, these findings have further crystallised the extent and severity of workplace stress in the public and private sector. This combined evidence raises questions about the validity of basing assumptions of workplace stress on claim statistics, and highlights the importance of investigating workplace environments.

Aim 2. Domains of Workplace Stress: Job Content versus Job Context

The present study, secondly, aimed to test whether Job Content stressors were considered by employees in both sectors to be more problematic than Job Context stressors. The results indicated that employees in both sectors rated their organisations significantly less effective in managing Job Content stressors than Job Context stressors. These results supported the second hypothesis. Results also, therefore, supported the suggestion in the literature (e.g. MacKay et al., 2004; Mustard, 2004) that the three Job Content stressors have a more substantial evidence base for stress-related ill-health effects than the three Job Context stressors.

MacKay et al. (2004) suggested that one reason for this difference could be that employees are more widely exposed to Job Content stressors than those of Job Context. These results seem to suggest that stress management initiatives should focus more on stressors of Job Content, such as job demands. However, the literature reviewed in the current study revealed a growing base of research strongly associating Job Context stressors with workplace stress and ill-health effects. Therefore, these should not be disregarded. Instead, it is argued that, although results indicate that the current sample perceives Job Content stressors as more problematic, other organisations may vary on which stressor or overall domain (content or context) is more problematic for them at a certain time. For example, if a workplace is experiencing prolonged and poorly managed change, the dimension of Change and domain of Job Context would be significantly more associated with ongoing stress. Accordingly, generic prevention and intervention programs may be ultimately unhelpful in addressing stress within a particular organisation at a particular time. A more context specific approach is therefore recommended, with stress management programs tailored to suit identified needs of organisations (Coffey & Dugdill, 2006; Fairbrother & Warn, 2003).

Aim 3. Public and Private Sector Comparisons to Benchmarks: Specific Hazards and Risk Profiles

Comparisons of public and private sector HSE profiles against HSE benchmarked norms revealed several points of interest. Both the public and private sector sample scores indicated a higher incidence of hazards compared with the normative sample. All seven subscales and 35 items were rated below the top 20% of the United Kingdom sample scores. Examination of the public sector comparison with norms found workplace stress hazards particularly associated with subscales of Role and Relationships. Private sector scores also indicated some workplace stress hazards associated with Role, as well as some risk associated with bullying. Overall 25 % (28% public, 10% private) of employees indicated they were always, often or sometimes bullied.

Managing Workplace Stress: Implications for Prevention and Interventions in Public and Private Sector Australia

Traditionally, interventions for workplace stress have focused on individual self efficacy of workers in managing psychological stress symptoms. This, however, has had limited impact on Workers' Compensation claim rates and actual illness rates (Hart & Cooper, 2001). Accordingly, a more context specific approach to workplace stress interventions has been suggested in literature (e.g. Coffey & Dugdill, 2006; Fairbrother & Warn, 2003).

In the current study, comparisons of private and public sector data against normative benchmarks have highlighted several key risk areas requiring intervention. For both sectors these areas include issues of role clarity and relationships. For the private sector, role clarity interventions could focus on development of organisational mission statements and job role descriptions, strategic planning, goal setting and horizontal and vertical communication pathways - not only from a whole of organisation level but also within a smaller team specific level. Interventions for work related stress issues involving Relationships could focus on examining workgroup processes, group boundaries, team dynamics and team building, including self assessment of individual and team and further development of interpersonal skills such as active listening, use of empathy and assertiveness (P. Stebbins, personal communication, 26 September, 2006). For the public sector interventions for Role would be consistent with private sector interventions outlined above, but with a particular focus on specific public sector drivers of change such as political pressures, community expectations, and service delivery evolution in terms of best practice, instead of on the private sector drivers of innovation and profit/revenue.

In addition, adverse findings regarding public sector Manager Support highlight the importance of supportive leadership training and skills development for frontline managers.

Limitations

Several limitations of the current study should be considered. Firstly it did not take into account extraneous variables, such as participant gender, age, role, income, education and specific occupational category, which could have affected the results. This was owing to the fact that the data was released without such information due to issues of confidentiality. Although the current study did include gender breakdown figures, it was not factored into the analyses, as figures were provided to the researchers separate from the surveys. Secondly, results of the study were based on one measure with a pre-determined definition of stress. While the HSE Indicator Tool is a robust measure and includes six dimensions of workplace stress, there could be other important stress-related factors that are not covered by the tool. For example, boredom and work underload have been linked with stress (Viswesvaran et al., 1999).

Thirdly, the study used a cross sectional design, making it impossible to determine a causal relationship between sector and dimensions of stress. Lastly, it is recognised that there is an overrepresentation of public sector workers in the sample. Eighty-four percent of the sample were public sector employees compared with the national average of 20%. This issue was addressed in the analyses by using a test which did not assume equal variance.

Strengths and Contribution

The current study is one of very few comparing workplace stress in the private and public sector. It took into account a suggestion made in previous research (Macklin et al., 2006) and compared actual work environments for differences between the sectors in the experience of stress. This is a major step forward in advancing understanding of workplace stress within Australia. Further, the study utilised a measure, the HSE Indicator Tool, developed on a United Kingdom sample, with an Australian sample, responding to an urgent need for Australian normative data on workplace stress.

In line with the current dominant perspective, the study operationalised stress as specific dimensions of the workplace environment (i.e., Demands, Control, Support, Role, Relationships, Change,) within the two primary domains of Job Content and Job Context. The present study also attempted to advance understanding of workplace stress theory by examining a more extensive

taxonomy of factors than in previous research, much of which has focused on limited variables, such as those in the demand-control studies. An additional strength of the study is that it addressed limitations in some of the previous research regarding gender, work type and work group size.

Future Research Directions

It should be noted here that as the analysis presented in the current study is one of the first of its kind and is, therefore, largely exploratory, the results need to be verified by comparable analyses. These should address factors which potentially affected current results. For example, differences in legislative and ideological frameworks underlying the sectors may have led to public sector employees experiencing less fear of job loss and less apprehension about indicating they were stressed in comparison to private sector workers (Dollard & Walsh, 1999).

Further it is also a possibility that the significant results found between the sectors may be due to differences in job types held by participants, rather than actual differences between the sectors (Macklin et al., 2006). Future studies should control for workplace factors, including size of organisation and position, as well as controlling for demographics, such as gender and age. For example, statistics reveal that women, on average, lodge more mental stress claims than men (The Office of the Australian Safety and Compensation Council, 2007). Comparing actual workplace environments, instead of claim statistics, would allow a clearer picture of whether women are actually more stressed in the workplace. More specific and detailed analyses which factor in information regarding gender, organisational type and job role, as well as other workplace features, are essential in isolating the issues precipitating occupational stress.

Regarding the range of stressors investigated in the present study, future research could add to the dimensions and cover a wider range of factors associated with stress (e.g. reward and recognition, skills utilisation and boredom). Additionally, objective measures of stress, such as the number of days employees have taken off work or their stress claim rates may also contribute important information, such as the congruence or disparity between workplace stress and claim lodgement statistics.

Summary and Conclusion

In summary, the purpose of the present study was to examine and compare perspectives of public and private sector employees on dimensions of workplace stress in an Australian context. The findings indicated that workers in the public sector are experiencing higher levels of workplace stress than workers in the private sector, and that workers across both sectors considered Job Content stressors to be more problematic than Job Context stressors. Additionally, in terms of risk profiles based on HSE benchmarks, both private and public sector employees (but particularly the public sector) appear to face a significant risk of workplace stress in the areas of understanding job roles and of relationships, particularly regarding bullying, harassment and lack of peer support.

Results of the present research reveal some similarities and some significant differences between the sectors in their experience of workplace stress, highlighting the need for further research into the topic, particularly in the area of targeted and specific interventions to address identified workplace stress risks. Future studies should be conducted within the framework of improving the relevance and effectiveness of stress management initiatives to ensure that for the next generation of employees, organisations are places of both increased wellness and improved performance.

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