Psychosocial Hazards and Occupational Stress

Core Body of Knowledge for the Generalist OHS Professional

The OHS Body of Knowledge for Generalist
OHS Professionals has been developed under the
auspices of the **Health and Safety Professionals Alliance**

The Technical Panel established by the Health and Safety
Professionals Alliance (HaSPA) was responsible for developing
the conceptual framework of the OHS Body of Knowledge and
for selecting contributing authors and peer-reviewers.
The Technical Panel comprised representatives from:

The Safety Institute of Australia supported the development of
the OHS Body of Knowledge and will be providing ongoing support
for the dissemination of the OHS Body of Knowledge and for the
maintenance and further development of the Body of Knowledge
through the Australian OHS Education Accreditation Board which
is auspiced by the Safety Institute of Australia.

Synopsis of the OHS Body of Knowledge

Background

A defined body of knowledge is required as a basis for professional certification and for accreditation of education programs giving entry to a profession. The lack of such a body of knowledge for OHS professionals was identified in reviews of OHS legislation and OHS education in Australia. After a 2009 scoping study, WorkSafe Victoria provided funding to support a national project to develop and implement a core body of knowledge for generalist OHS professionals in Australia.

Development

The process of developing and structuring the main content of this document was managed by a Technical Panel with representation from Victorian universities that teach OHS and from the Safety Institute of Australia, which is the main professional body for generalist OHS professionals in Australia. The Panel developed an initial conceptual framework which was then amended in accord with feedback received from OHS tertiary-level educators throughout Australia and the wider OHS profession. Specialist authors were invited to contribute chapters, which were then subjected to peer review and editing. It is anticipated that the resultant OHS Body of Knowledge will in future be regularly amended and updated as people use it and as the evidence base expands.

Conceptual structure

The OHS Body of Knowledge takes a 'conceptual' approach. As concepts are abstract, the OHS professional needs to organise the concepts into a framework in order to solve a problem. The overall framework used to structure the OHS Body of Knowledge is that:

> **Work** impacts on the **safety** and **health** of humans who work in **organisations**. Organisations are influenced by the **socio-political context**. Organisations may be considered a **system** which may contain **hazards** which must be under control to minimise **risk**. This can be achieved by understanding **models causation** for safety and for health which will result in improvement in the safety and health of people at work. The OHS professional applies **professional practice** to influence the organisation to being about this improvement.

This can be represented as:
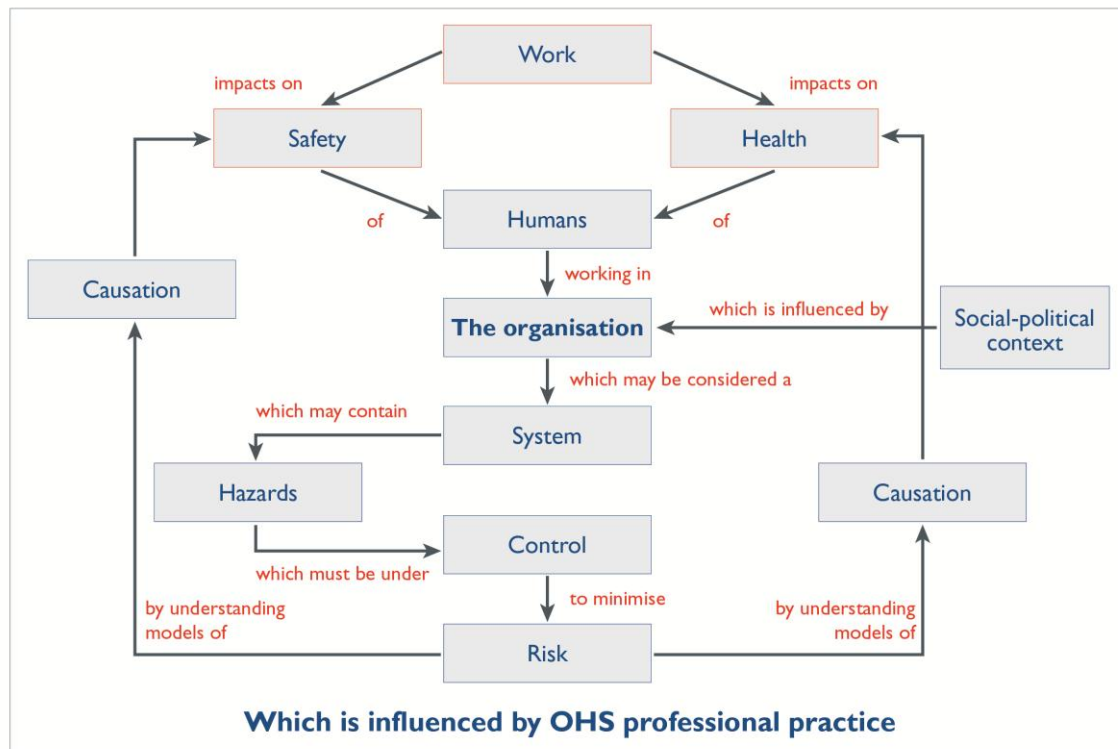
Audience

The OHS Body of Knowledge provides a basis for accreditation of OHS professional education programs and certification of individual OHS professionals. It provides guidance for OHS educators in course development, and for OHS professionals and professional bodies in developing continuing professional development activities. Also, OHS regulators, employers and recruiters may find it useful for benchmarking OHS professional practice.

Application

Importantly, the OHS Body of Knowledge is neither a textbook nor a curriculum; rather it describes the key concepts, core theories and related evidence that should be shared by Australian generalist OHS professionals. This knowledge will be gained through a combination of education and experience.

Accessing and using the OHS Body of Knowledge for generalist OHS professionals

The OHS Body of Knowledge is published electronically. Each chapter can be downloaded separately. However users are advised to read the Introduction, which provides background to the information in individual chapters. They should also note the copyright requirements and the disclaimer before using or acting on the information.

Psychosocial Hazards and Occupational Stress

Kïrsten A Way B.OccThy, B.A (Psych Hons), CPE, MAPS.
School of Psychology, University of Queensland.
k.way@psy.uq.edu.au

Kïrsten is an Organisational Psychologist, Occupational Therapist and Certified Professional Ergonomist who specialises in how worker and group-level psychology can affect occupational health and safety. She has been integral in determining and implementing government policy in work-related psychological injury and has over 15 years experience investigating work-related injury or illnesses specifically due to occupational stress, workplace bullying, human factors and ergonomics, both in Australia and overseas. As well as working in private practice, she has worked in various positions for the OHS regulator both in Queensland and the United Kingdom. She is currently conducting research as part of her PhD studies at the University of Queensland and has published on the role of supervisors in conflict. She has been working collaboratively on research to develop a risk assessment tool for occupational stress and bullying with The University of Queensland and The Australian National University.

Peer reviewer

Bill Pappas BBSc, BA, BEd, DipTeaching, MVocCouns
Organisational Psychologist
National Coordinator, Australian Psychological Society, Occupational Health
Psychology Interest Group

Core Body of Knowledge for the Generalist OHS Professional

Core Body of Knowledge for the Generalist OHS Professional

Psychosocial Hazards and Occupational Stress

Abstract

Exposure to work-related psychosocial hazards is escalating in today's 24-hour society, which is increasingly dominated by knowledge work. This chapter – the first of three chapters focused on psychosocial hazards – introduces the topic and provides an overview of key concepts related to psychosocial hazards. It presents a framework of twelve work stressors that increase the risk of injury/illness: time pressure; cognitive demands; emotional demands; hours of work; poorly defined work roles; conflict; poorly managed change; violence and aggression; lack of job control; lack of supervisor and/or co-worker support; organisational injustice; and inadequate reward and recognition. The risk-assessment process for psychosocial hazards is outlined and implications for Occupational Health and Safety (OHS) practice are discussed.

Keywords:
psychosocial, occupational stress, stress, mental health, work stressors

Contents

1   Introduction

During the last twenty years, risk management of work-related psychosocial hazards has been a significant growth area within the Occupational Health and Safety (OHS) discipline, both in Australia and internationally. Psychosocial hazards are poised to eclipse many other hazards in terms of direct and indirect costs, contribution to ill health, and importance to businesses and their undertakings. Furthermore, the regulatory space now clearly encompasses psychosocial hazards with the national model *Work Health and Safety Act* (Safe Work Australia, 2011a) specifying a definition of 'health' that includes physical and psychological components (WHSA s 4).

Psychosocial hazards pose a unique challenge to OHS professionals. This challenge is fuelled by the complexity of research findings, high media interest, the limitations of regulations, unique skills required by professionals working in this area, industry perceptions of the issue, and the often cumulative nature of injury or illness outcomes that are not proximal to one particular workplace event. Despite this, these hazards can and should be managed in the same manner as any other OHS hazard. One of the defining characteristics of psychosocial hazards is their interface with the very core of work, including how work is designed and operationalised through management and human resource practices. This means the reach of the hazard can be long with tentacle-like influence on many aspects of the workplace through the nature of work demands, the behaviours of individual workers and managers, and organisational policies.

It is somewhat difficult to consider psychosocial hazards without a concomitant focus on mental health; however, it would be grossly erroneous to believe that controlling these workplace hazards is relevant only to mental health. In fact, it is the physical health outcomes that were first recognised by researchers and that still loom large in terms of recognised health outcomes from exposure to work-related psychosocial hazards (see section 4.1). As well as physical and mental health outcomes, psychosocial hazards can have a negative impact on worker behaviours, on organisational outcomes such as engagement, absenteeism, turnover and productivity, and on team cohesion and team performance. Also, it has been recognised that psychosocial hazards can delay recovery from work-related injury/illness and therefore can influence return-to-work outcomes. This chapter provides an introduction to psychosocial hazards and, in particular, to work-related stress. Two related chapters address the psychosocial hazards of fatigue and of bullying, aggression and violence.[1]

---

[1] See *OHS BoK* Psychosocial Hazards: Fatigue and *OHS BoK* Psychosocial Hazards: Bullying, Aggression and Violence.

1.1 Definitions

1.1.1 Psychosocial hazards

Broadly, the term 'psychosocial' refers to the interrelationships between individuals' thoughts and behaviours, and their social environment. In literature outside the OHS field, this term often refers to social environments such as family of origin, socioeconomic status and level of education. Whilst it is important to be aware of individual and non-work psychosocial factors, in the OHS context psychosocial hazards have come to refer only to hazards created by work and the work environment. A key international policy document – *PRIMA-EF Guidance on the European Framework for Psychosocial Risk Management* (Leka & Cox, 2008), which is part of the World Health Organization's *Protecting Workers' Health Series* – states:

> Work-related psychosocial risks [sic] concern aspects of the design and management of work and its social and organisational contexts that have the potential for causing psychological or physical harm (Leka, Giffiths & Cox as cited in Leka & Cox, 2008, p. 1).

Although 'psychosocial hazards' is a term often used in policy documents both in Australia and internationally, it is most useful as a broad reference to more specific occupational hazards such as stress, bullying or harassment, occupational violence and fatigue.

1.1.2 Occupational stress

The definition of 'stress' has been the subject of much academic and public debate. Although the term has been expected to support an immense breadth of meaning (and resultant research variability), it is now possible to draw the divergent threads together to outline the key defining characteristics of occupational stress, which stem from the evolution of stress theory. Specifically, occupational stress can be defined as:

> The physiological and psychological responses of workers who perceive that their work demands exceed their resources and/or abilities to cope with the work.
>
> (see for example, WSHQ, 2010; Leka, Griffiths and Cox, 2003).

There are three main points to consider in relation to this definition. Firstly, it is important to recognise that the stress response is a multifactorial (i.e. physiological, cognitive and emotional) response to a set of stimuli that can lead to ill health. Secondly, stress is not a disease in its own right, but a pathway that can lead to ill-health, whether mental or physical health outcomes. The ill-health pathway occurs when there is significant 'imbalance' between the demands placed on a person, and the resources they have to cope with those demands. Thirdly, the individual's *perception* of their work characteristics (including their perceptions of their coping skills and how important it is to them that they cope) is an integral part of the stress equation.

2   Historical context

For the majority of the 20th century, Australia was a country where work-related psychosocial hazards were firmly believed to be outside the scope of OHS legislation and there was little recognition of the potential effects of work stressors on worker health. Health issues, and mental health issues in particular, were seen to be the concern of individual workers and their treating medical practitioners if, indeed, workers were encouraged to seek treatment at all.

By the end of the 20th century however, empirical evidence of the health effects of work-related psychosocial hazards was accumulating. Governments and employer groups began to see, in very real terms, the human and financial costs associated with exposure to work-related psychosocial hazards. As risks associated with the more traditional areas of OHS were being better managed, psychosocial hazards became the new frontier. Policy directions in many countries were increasingly influenced by the World Health Organisation (WHO) and their report on social determinants of health (see, for example, CSDH, 2008). Governments in Australia and oversees began to make explicit the obligation to manage psychosocial risks by drafting references into the scope of OHS legislation, and releasing standards and codes of practice. This included the national model *Work Health and Safety Act* (Safe Work Australia, 2011a), which defines 'health' as inclusive of physical and psychological health (WHSA s 4). Furthermore, research into how OHS regulators in Australia have been responding to psychosocial hazards found that there has been an increase in relevant interventions, campaigns and guidance (Johnstone, Quinlin & McNamara, 2011).

Development of empirical evidence of the significance of work-related psychosocial hazards has stemmed from large and separate bodies of literature on, most notably: work organisation and job design; occupational stress; workplace bullying and harassment, and other forms of negative workplace behaviours (such as workplace incivility, counterproductive workplace behaviours, mobbing, abusive supervision, workplace violence and aggression); fatigue; and the application of risk-management principles to psychosocial hazards. In the limited space available for this chapter, it is impossible to follow the historical developmental threads of each of these separate bodies of literature; however, some influential theories are listed below.

Kompier (2002) identified seven main theoretical approaches to psychological hazards and occupational stress: Cherns' 1976 Sociotechnical approach; Hackman and Oldham's 1980 Job Characteristics model; Kahn et al.'s 1964, and French, Caplan & Van Harrison's 1982 Person–Environment Fit model; Hacker's 1964 Action Theory; Karasek and Theorell's 1990 Job Demand-Control-Support model; Warr's 1994 Vitamin model and Siegrist's 1998 Effort-Reward Imbalance model. More recently, the Job Demands-Resources model (Demerouti, Bakker, Nachreiner & Schaufeli, 2001) has also gained support. These models have veins of similarity and difference running through them and there are particular

aspects on which most experts now agree. Most of these theories highlight the design and management of work as fundamentally important in creating risk, and also that it is the individual's cognitive appraisal of these work design and management factors that is important. The importance of cognitive appraisal in stress and coping was first proposed in Lazarus and Folkman's (1984) highly influential Transactional Model of Stress appraisal and Coping.

3   Extent of the problem

According to the World Health Organisation, depression is the leading cause of disability (in terms of years lived with disability) (WHO, 2011). In 2006 in Australia, 18% of adults were reported to have had a mental disorder during the previous 12 months (ABS, 2006). Since 2002–03, workers' compensation claims for mental disorders have been trending downwards and in 2008–09, they amounted to 5% of serious[2] claims in Australia (Safe Work Australia, 2011b). Safe Work Australia (2011b) speculated that this downward trend may be due to legislative changes in some jurisdictions making it more difficult to meet criteria for claims acceptance for mental disorders. Nevertheless in 2007–08, mental-stress-related claims had the highest median payment ($16,500), which was more than double that of all serious claims ($6900) and the median lost work time (11 weeks) was nearly three times the median for all serious claims (4 weeks) (Safe Work Australia, 2011b). Claims for other health outcomes associated with work stressors are notoriously high (e.g. musculoskeletal disorders), and although it is difficult to quantify the relative contribution of psychosocial hazards to these injury outcomes, it is important to consider them in discussion of the size of the problem.

Anecdotal evidence has indicated for some time that claims are not a good indicator of the scale of problems associated with psychosocial hazards. The likelihood of an individual making a claim for a mental disorder can be influenced by stigma and difficulty in having claims accepted. In 2008, an Australian study quantified this underestimation of claims data, reporting that overall job-attributable risk for depression is 13.2% for males and 17.2% for females – about 30 times more than the workers' compensation claims statistics indicate (LaMontagne, Keegel, Vallance, Ostry & Wolfe, 2008). In 2010, LaMontagne, Sanderson and Cocker reported that the societal cost of depression attributable to job strain in Australia was $730 million over one year and $13.8 billion over a lifetime. It should be noted that this does not include the claims underestimation, or the costs associated with other mental illnesses, such as anxiety disorders and adjustment disorders, nor does it take into account physical illnesses (such as cardiovascular disease, musculoskeletal disorders, gastrointestinal disorders) that may be attributable to job strain. Should these be considered, the lost time and costs would be significantly greater, adding weight to the argument that

---

[2] "Serious claims involve either a death, a permanent incapacity, or a temporary incapacity requiring an absence from work of one working week or more" (Safe Work Australia, 2011, p. 1)

psychosocial risk management is fundamentally important for individual workers, and for the productivity of work teams, organisations and our nation as a whole.

4   Understanding psychosocial hazards

4.1   Occupational stress and worker health and wellbeing

Whilst a certain amount of stress can improve performance and motivation, extreme stress or prolonged exposure to work stressors can have negative effects on health and wellbeing. Although it has been criticised for its non-transactional view, it is useful to consider Selye's (1956) seminal 'general adaptation syndrome' theory which demonstrates early understanding of the links between stress and ill-health. After exposing rats to prolonged stress, Selye generated a three-stage model of the body's physiological response to stress encompassing:

1. Alarm – where the hypothalamic-pituitary-adrenal system is activated and there is preparedness for action (fight or flight)
2. Resistance – where there is an attempt to cope with a prolonged stressor by maintenance of high levels of arousal
3. Exhaustion – where the defence systems of the body become exhausted and health effects occur (e.g. high blood pressure). In this phase, responses to any additional stressors also become exaggerated. (Selye, 1956)

Seyle's theory highlights that it is rarely single acute episodes of stress that lead to ill health, but prolonged exposure to stressors. Also related to this, the frequently cited Yerkes-Dodson Law (1908) suggests that for any particular task and worker there is an optimum level of arousal, or stress, at which performance is at its maximum capacity and, beyond which, performance decreases (Figure 1). This suggests that the stressor must be at certain intensity for it to have detrimental effects.
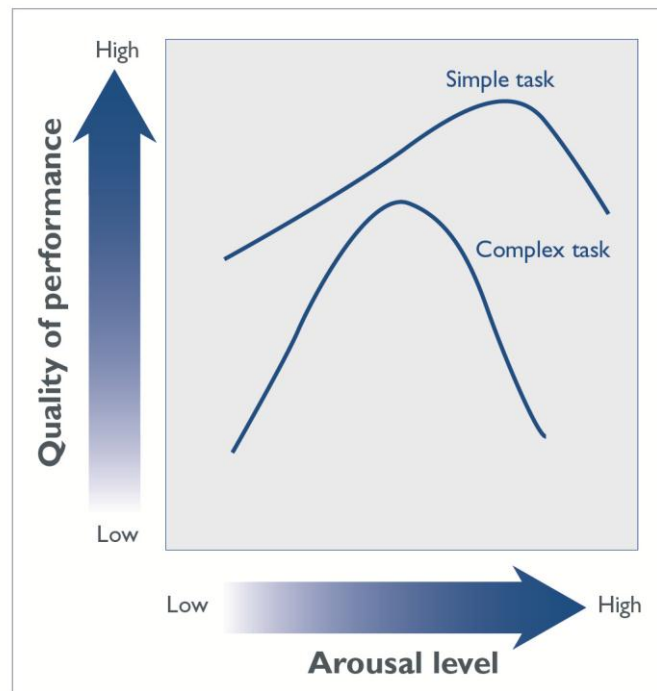
Figure 1: Representation of the Yerkes-Dodson (1908) Law (Modified from Wickens, Gordon & Liu, 1998)

Applying these principles to an organisational context, Figure 2 shows the causal flow from work characteristics (or work stressors) to health outcomes, and adds in our modern understanding of moderating or buffering effects. These buffering effects, and the mechanism of the stress-strain process will be explained further in subsequent sections. (note this figure also depicts three intervention points which will be relevant to risk controls in section 5.)
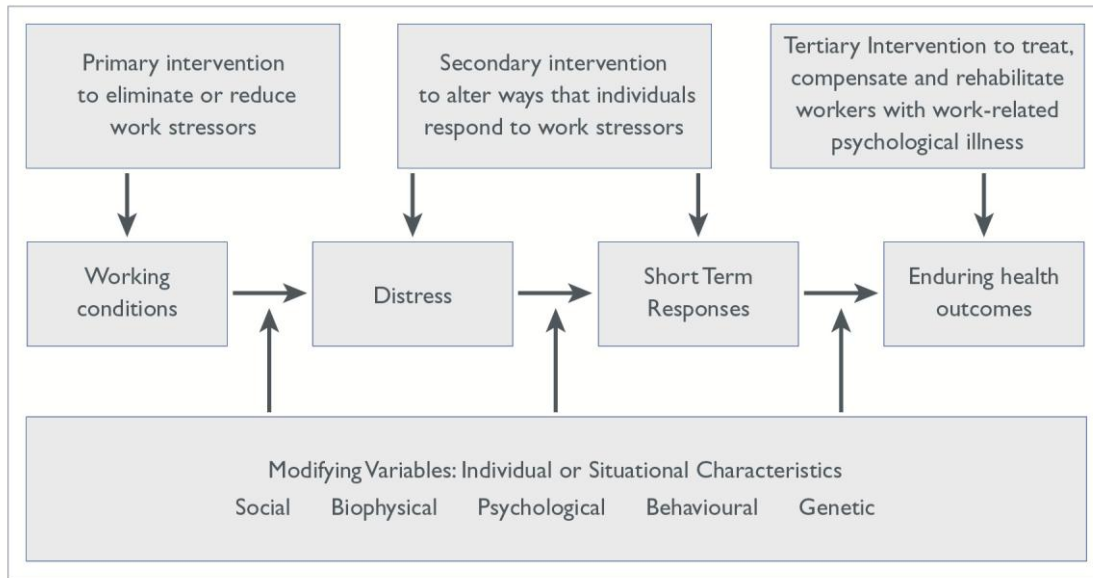
Figure 2: The job stress process, modifying variables and intervention points (Modified from LaMontagne, Keegel & Vallance, 2007a, p. 224)

4.1.1   The link between work stressors and worker strain

Work stressors are demands that workers perceive as threatening (e.g. certain tasks and role requirements, conflict, some management actions) whereas strains are negative responses that result when such demands are in excess of the coping resources of workers (Koslowsky, 1998). Therefore, 'stress' is a dynamic process in which physiological and/or psychological[3] manifestations are relative to a perceived imbalance between work demands and ability to cope with those demands. This process elicits change in the normal psychological or physical functioning of the worker. Most theories of occupational stress conceive of this processes as the mechanism or causal link between work characteristics and worker outcomes or, alternatively, from work stressors to worker strain (Lazarus, 1990; Lazarus & Folkman, 1984; Spector, Chen & O'Connell, 2000). This understanding of the stressor-strain relationship has allowed research to identify measurable antecedents (stressors) and outcomes (strain).

Work stressors have been empirically linked with negative health outcomes including anxiety, depression, burnout, cardiovascular disease and associated risk factors (e.g. blood pressure, serum cholesterol and distribution of body fat) (Bishop et al., 2003; Bromet, Dew, Parkinson & Schulberg, 1988; Bunker et al., 2003; Kivimäki et al., 2002; Kuper & Marmot, 2003; Landsbergis et al., 2003; Tsutsumi, Kayaba, Theorell & Siegrist, 2001; van der Doef & Maes, 1999; Wilhelm, Kovess, Rios-Seidel & Finch, 2004), and

---

[3] See *OHS BoK* The Human: Basic Principles in Psychology

musculoskeletal disorders (Devereux, Vlachonikolis & Buckle, 2002; Engstrom, Hanse & Kadefors, 1999; Hagen, Magnus & Vetlesen, 1998; Torp, Riise & Moen, 2001). Exposure to work stressors has also been linked with increases in alcohol consumption and smoking, and difficulty sleeping (see, for example, de Lange, Taris, Kompier, Houtman & Bongers, 2003). One of the most influential studies in this area is the longitudinal Whitehall II study, which has followed 10308 British public servants over 14 years, and resulted in more than 100 published papers. Head, Martikainen, Kumari, Kuper and Marmot (2002) summarised findings relevant to the work-related psychosocial hazards and health outcomes for this research cohort (Table 1).

Table 1: Summary of findings from two Health and Safety Executive funded research reports using the Whitehall II cohort (Head et al., 2002, p. vi)

Work Characteristic	Associated with
Low decision latitude	Obesity Alcohol dependence Poor mental health Poor health functioning Increased sickness absence Coronary heart disease
High job demands	Obesity Poor mental health Poor health functioning Coronary heart disease
Low social support at work	Obesity Poor mental health Poor health functioning Increased sickness absence
Combination of high effort and low rewards	Alcohol dependence Poor mental health Poor health functioning Sickness absence (long spells) Diabetes Coronary heart disease

4.2 Psychosocial hazards and organisational outcomes

Psychosocial hazards can have critical impacts on various areas related to organisational performance; indeed, it has been argued that worker strain mediates the relationship between work stressors and organisational ineffectiveness (Darr & Johns, 2008; Kahn & Byosiere, 1992). Negative organisational outcomes can include:

- *Absenteeism:* Mental health problems have been identified as the third most commonly cited reason for absence for Australian workers, with 18% of workers identifying anxiety, stress and/or depression as a cause of work absence (Direct Health Solutions, 2009).

- *Presenteeism or disengagement:* Presenteeism is defined as the decreased productivity and and 'below normal' work quality that occurs due to health problems when employees are physically present in their jobs (Koopman et al., 2002). Whilst unplanned or sick leave may be the most obvious cost associated with psychosocial hazards, research has suggested that the cost of reduced productivity at work is much higher than the cost of absence; while 32.4% of the cost of work-related stress can be accounted for by absenteeism, 58.4% is due to presenteeism (Sainsbury Centre for Mental Health, 2007).
- *Other organisational outcomes:* Other outcomes that have been shown to be related to exposure to psychosocial hazards at work include turnover/attrition, elevated workers' compensation cost, negative customer service impacts and relationships with stakeholders, and indirect costs (e.g. management time spent dealing with conflict, team disharmony, training and employee assistance program costs (Kahn & Byosiere, 1992).

4.3 Psychosocial risk factors/work-related stressors: An illustrative framework

It is important to consider how work stressors can be best represented in order to be easily understood by industry. As there may be many work stressors implicated in any risk assessment (12 are listed in this chapter), authors have tended to use multiple ways to categorise them as, for example, stressors related to 'work content' or 'work context' (Cox, Griffith & Rial-González, 2000) or stressors related to 'job demands' and 'job resources' (Demerouti et al., 2001). Job demands have been conceptualised as work stressors that can have a negative effect on physiological and psychological heath (e.g. time pressures, workplace conflict or high emotional demands). Job resources, on the other hand, have been described as creating a 'buffer' against the potential negative effects of job strain. This occurs via a mechanism of increased coping. Examples of job resources include supervisor support or change management strategies.

The framework represented in Figure 3 is underpinned by several theoretical models, including the Job Demands-Resources model (Demerouti et al., 2001) and the Job Demand-Control-Support model (Karasek & Theorell, 1990). The latter is possibly the most empirically tested and certainly most influential model of work-related stress. It suggests that work characteristics are not linearly related to worker health, but are interactive in their effects. More specifically, the Job Demand-Control-Support model postulates that work that is high in job demands and low in decision latitude (workers' perceived control over their tasks and conduct during the working day) is associated with strain, but that this relationship is buffered by social support. Also underpinning the framework depicted in Figure 3 is the Effort-Reward Imbalance model (Siegrist, 1998), which posits that effort invested by a worker is part of a social contract reciprocated by appropriate rewards (e.g. money, esteem and social control) they gain. Other potential work stressors included in the framework, such as interpersonal conflict, (poorly managed)

change and organisational (in)justice, have been included due to the strong evidence base regarding their association with job strain.
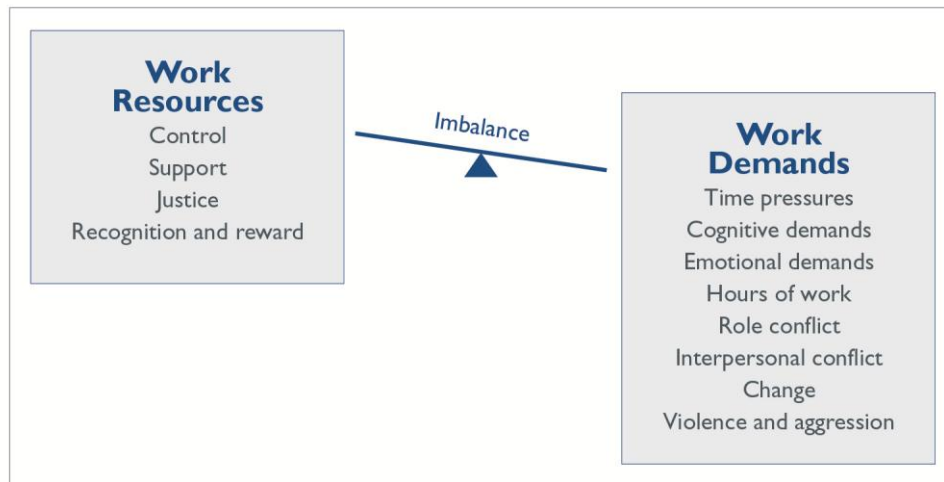
Figure 3: Psychosocial risk factors/work stressors illustrative framework – potential imbalance between work demands and work resources contributing to worker experience of strain.

The risk factors depicted as work resources or work demands in Figure 3, and described in more detail below, represent ways that organisations can influence the balance/imbalance at the worker-demands interface and thereby manage worker exposure to occupational stress. That is, the 'see-saw' can be tipped in favour of reducing stress by reducing the work demands (for example, by redesigning the work), and or by increasing their job resources (for example, by providing additional support or increasing their job control). The work-related stressors – which should form the basis of any assessment of risk – are discussed in more detail below.

4.4   Psychosocial risk factors/work-related stressors explained

4.4.1   Time pressure

Time pressure or role overload refers to the requirement to work very hard and/or very fast to meet key performance indicators set for the job or task, or having inadequate time to complete work tasks and requirements (Ohly & Fritz, 2010). Also, time pressure may result from unrealistic deadlines or inadequate resourcing to achieve work tasks. Work pacing dictated by machines and electronic monitoring of performance have been shown to create time pressure if not well designed and implemented. Time pressure may not be

problematic if it occurs infrequently or at certain defined times within the job cycle or year; however, where it is constant, frequent or excessive, it can be a work stressor (Rick, Thomson, Briner, O'Regan & Daniels, 2002).

4.4.2   Cognitive demands

Cognitive demands associated with work tasks can be many and varied; however, two main types of cognitive demands have been shown to negatively affect psychological and physical wellbeing, and result in performance decrements. These are tasks with high cognitive loads and task with low cognitive loads (monotonous tasks). The former require sustained concentration, divided attention and high-level decision making (Jackson, Wall, Martin & Davids, 1993). Air-traffic controller and anaesthetist positions are examples of jobs that may fit into this category. On the other hand, under-arousal occurs when tasks require too little of our cognitive resources (e.g. sorting fruit, folding boxes, quality checking pastry). Monotonous tasks with little variety can be fatiguing, stressful and prone to error as evidenced in the example of quality control inspectors on a production line who had a 30–40% miss rate (Wickens et al., 1998).

4.4.3   Emotional demands

Emotional demands or work-related emotional labour can include:

- Jobs requiring workers to show false displays of emotion, such as happiness or desire to please/serve, even in situations where the work has induced anger and resentment. The suppression of negative emotion combined with the job requirement for 'surface acting' positive emotion has been associated with detrimental effects on worker wellbeing (Brotheridge & Grandey, 2002; Zapf, Vogt, Seifert, Mertini & Isic, 1999). Flight attendant and retail worker positions are examples where emotional labour may be a job requirement.
- Jobs where workers are exposed to emotionally distressing situations. Such positions have been associated with a heightened risk of illness (see for example, Schnurr & Green, 2004). For example, police officers and fire fighters may be exposed to risks of this nature.

4.4.4   Hours of work

Hours of work, including poorly designed/managed work scheduling, can create risks to health and safety via two mechanisms:

- Exposure time – hours of work may dictate how long workers are exposed to psychosocial hazards in a given working week and therefore directly influence the level of risk.

- Fatigue – hours of work and shift designs can lead to fatigue, which is a significant predictor of injuries and near-miss accidents at work (Gold, Rogacz, Bock, Tosteson, Baum et al., 1992; Swaen et al., 2002), sickness and absenteeism (Dembe, Erickson, Delbos & Banks, 2004, Janssen et al., 2003), and poor work-life balance (Lingard & Francis, 2004).[4]

4.4.5 Work Roles

Role conflict and ambiguity refers to workers' understanding of their role within the organisation and whether the organisation ensures that roles do not conflict. This includes people having an unclear understanding of performance requirements and job responsibilities, frequent or sudden changes in roles, or problematic role overlap with others' roles (see, for example, the seminal paper by Rizzo, House & Lirtzman, 1970).

4.4.6 Conflict

Interpersonal stressors, which may include, for example, workplace incivility or certain management styles, have been reported to be among the more extreme stressors at work (Jex & Beehr, 1991; Jex, 1998; Smith & Sulsky, 1985), responsible for more than 80% of difference in daily mood (Bolger, DeLongis, Kessler & Schilling, 1989). Empirical evidence suggests that work-related interpersonal conflict is associated with compromised psychological and physical functioning (for a meta-analysis, see Spector & Jex, 1998) as well as contribution to psychological disturbance when controlling for health practices, age, stressful work events, stressful life events, and support from work and home (Gilbreath & Benson, 2004). Workplace bullying and harassment are particular interpersonal stressors, which can lead to outcomes of an even more severe nature (Einarsen, 1999).[5]

4.4.7 Change

This risk factor refers to how organisational change is managed, including how it is communicated. There is a large amount of research suggesting that organisational change is a work stressor (see, for example, Sutton & Kahn, 1986; Jimmieson, Terry & Callan, 2004). Having effective systems to communicate and manage the change process can prevent or minimise this stress.

---

[4] See *OHS BoK* Psychosocial Hazards: Fatigue
[5] See *OHS BoK* Psychosocial Hazards: Workplace Bullying, Aggression and Violence

4.4.8   Violence and aggression

Occupational violence and workplace aggression are risk factors for work-related stress that are addressed in a companion chapter.[6]

4.4.9   Job Control

'Job Control' refers to how much say people have in the way they do their work; it has been studied extensively as a job resource, most notably in the influential Job-Demand-Control-Support model (Karasek & Theorell, 1990). In this model, the related term - 'Skill discretion' - refers to how much variety people get in their work and how much opportunity people get to use their skills; low skill discretion has been found to have a negative impact on a range of work-related outcomes, whereas decision authority or autonomy has been shown to buffer the effect of high job demands on health-related outcomes (de Lange et al., 2003).

4.4.10 Co-worker and Supervisor Support

One characteristic of work that has been extensively studied as a buffer in the stressor-strain relationship is social support (Karasek & Theorell, 1990; for reviews, see van der Doef & Maes, 1998, 1999). Social support in the workplace can be provided by co-workeres and/or supervisors, and can classified as 'instrumental' support or 'emotional' support; instrumental support involves providing practical assistance to solve problems or offering tangible help, such as advice or knowledge, whereas emotional support involves listening empathetically or providing care (Swanson & Power, 2001). Empirical evidence of the buffering effect of social support has been gathered in a meta-analysis by Viswesvaran, Sanchez and Fisher (1999). Beehr et al. (2003) found that social support weakens the association between work stressors and strain even when the source of social support and the source of the stressor are the same. This implies that the instigator of the stress (e.g. a supervisor) also may be able to provide social support.

4.4.11 Organisational justice

Fairness at work, or organisational justice, is considered a multifactorial construct comprising:

- Procedural justice – the perceived fairness of procedures used in workplaces (e.g. the content, whether they are implemented consistently across time and workers) (Leventhal, 1980)

---

[6] See *OHS BoK* Psychosocial Hazards: Workplace Bullying, Aggression and Violence

- Distributive justice – the perceived fairness of decision outcomes (e.g. rewards are commensurate with effort, the candidate who best meets selection criteria gets offered the position/promotion) (Adams, 1965; Leventhal, 1976)
- Interactional justice – the perceived fairness of interpersonal treatment (e.g. dignity and respect) (Bies & Moag, 1986)
- Informational justice – the provision of information about the use of procedures, timelines, progress in application of procedures/decisions, and why outcomes were determined (Greenberg, 1993).

There is substantial evidence of associations between stressors, a sense of injustice and health (see for example, Brotheridge, 2003; Elovainio, Kivimäki, Vahtera, Virtanen & Keltikangas-Järvinen, 2003; Kivimäki et al., 2002; Taris, Peelers, Le Blanc, Schreurs & Schaufeli, 2001; Vermunt & Steensma, 2001; Ylipaavalniemi, Kivimäki, Elovainio, Virtanen, Keltikangas-Järvinen & Vahtera, 2005).

4.4.12 Recognition and reward

The Effort-Reward Imbalance model (Siegrist, 1998) centres on the concept of imbalance between the effort that a worker puts in and the rewards (e.g. money, esteem and social control) they gain. It is postulated that imbalances in this area are linked to negative effects on self-esteem, self-efficacy and health (Neidhammer et al., 2004, Pikhart et al., 2001, 2004; Tsutsumi et al., 2001). Siegrist (1998) referred to 'overcommitment' to explain why people who are intrinsically high in effort are more at risk of ill health from stress at work. The person-driven effort and the need for reward are acknowledgement of the contribution of individual differences to the stress response.

4.5   Individual differences

While the work stressors outlined above influence the likelihood and severity of worker strain, there are individual differences in how people respond to work stressors. That is, some individuals seem to cope with exposure to work stressors differently to others. Individual differences have been attributed to physiological and/or personality factors. There is evidence to suggest that individuals with high psychological wellbeing have substantially lower overall cortisol secretion, and also that oxytocin plays an important role as a biological mechanism underlying the stress-protective effects of positive social interactions (Heinrichs et al., 2003). Personality factors such as negative affectivity can increase the likelihood of job strain (see, for example, Spector, Fox & Van Katwyk, 1999) whereas strong self-esteem and perceived competence can strengthen a worker's belief in his/her capability and significance, and thus support active coping in stressful situations (Jimmieson, 2010).

There is a large and complex body of literature focused on individual differences and stress responses as well as attempts to identify vulnerable groups of people. This research is perhaps best summed up by Cox, Griffith & Rial-González (2000, p. 52), when they stated "there appears to be little evidence of trait-like vulnerability to stress beyond that implied for psychological health by a personal or family history of related psychological disorders." Therefore, whilst it is important to acknowledge individual differences, health and safety legislation requires duty holders to act to control the risk of *job-attributable* strain. Control of this risk should be done with a greater focus on aspects of the design and management of work that may be creating a risk to health and safety. To focus on individual differences at the expense of controlling work-related stressors would constitute a failure to ensure health and safety.

4.6   Risk assessment for psychosocial hazards

Risk assessment for psychosocial hazards follows the same principles as risk assessment for many other OHS hazards. Techniques can include analysis of organisational data, such as absenteeism, turnover and lost-work-time injuries; assessing worker complaints; observation of the workplace, tasks, context, practices and human interactions; and the use of worker surveys and/or focus groups. Assessment should include data collection and measurement of the relevant work stressors outlined in section 4.4.

Many studies have described processes used in successful interventions (Giga et al., 2003b; Cox & Griffiths, 2000; Kompier et al., 1998). In fact, an Australian measure of psychosocial safety climate has been developed, which focuses on a number of these processes (Hall, Dollard & Coward, 2010). Six factors fundamental to successful risk assessment are discussed below. (Although these are introduced in the risk-assessment section, they apply throughout the risk-management process for psychosocial hazards.)

4.6.1   Organisational and management commitment

Within a given organisation, initial recognition of the need for risk assessment and control for psychosocial hazards commonly stems from Workplace Health and Safety or Injury Management work units or committees. This is not unusual as practitioners working in these areas see firsthand the everyday health and organisational effects from exposure to psychosocial hazards. Consequently, prior to commencing risk assessment, one of the first endeavours is often the task of gaining senior management commitment to addressing these hazards.

Why is commitment important?

While senior management commitment is important for all areas of OHS, it is particularly important for psychosocial hazards because:

- Overt and visible senior management involvement is required for success. Senior management involvement signals the importance of the work and can directly impact a sense of greater 'support' for the workforce. That is, a manager who openly and convincingly expresses their desire for their workplace to be free from psychosocial hazards sends a message of care and concern for worker wellbeing. This can directly increase a sense of emotional support which can buffer against worker strain. The visible commitment may involve, for example, email or other communication from the CEO or GM, senior managers sitting on steering committees, standing items on agendas at staff and executive meetings and the CEO having final sign off/accountability for success.
- Resource commitments are required (e.g. time for staff participation, costs for interventions)
- Upward communication regarding potential business implications is required (e.g. cost-benefit ratios of intervening versus not intervening, potential lag times and realistic timeframes, likely business outcomes, possible associated business risks, links between psychosocial hazards and work design and management). Where management commitment is present and senior managers have a full awareness of implications, programs are less likely to be terminated prior to completion due to management surprise or fear regarding findings or recommendations.

4.6.2   Organisational communication

Organisational communication regarding any assessment and intervention is essential in order to convey management commitment to addressing the issue. Also, it is integral to the logistics of implementation of risk management processes and, particularly, to ensure adequate worker participation. Communication may be in the form of broadcast emails, posters, workshops, focus groups, or standing items on management and team meeting agendas.

4.6.3   Worker participation

Crucial to successful stress management is worker participation in:

- Risk identification and assessment
- Feedback of risk-assessment results
- Action planning
- Implementing interventions.

Worker participation influences success in the following ways:
1. Stress theory specifies that workers' perception of work stressors influences whether workers experience a strain or not. Therefore, the only way an accurate

risk assessment can be conducted is by asking workers about their perceptions of work stressors.

2. Involving workers in the process serves to increase their sense of 'work control' and 'support,' thereby having a positive impact on work stressors that may otherwise be increasing the risk associated with psychosocial hazards.

3. Worker input into action plans and interventions can mean that they are better targeted to problem areas as those who are familiar with the work have designed the risk-mitigation strategies.

4.6.4   Definition of areas / work groups for assessment

When undertaking risk assessment for psychosocial hazards, it is important to give careful consideration to work areas to be included in the assessment. For example, will the whole organisation be included in the risk assessment or only departments identified as potentially higher risk? Will the assessment allow for risk profiles to be ascertained at the work unit level, so as to adequately target both causative work stressors and subsequent interventions? Should risk profiles be available at the occupational level for certain parts of the organisation? In all of these decisions the aim is to ensure that work groups are defined and assessed to a level of detail that enables accurate targeting of risk-control measures.

Case Example 1

Organisation ZZZ employs 300 workers; of these 150 work in a manufacturing plant (that has three day-shift work groups and one night-shift work group), 100 work in a call centre (that has four work groups), and 50 work in head office functions such as HR, Marketing, Finance, Research and Development, and Management. In identifying work groups for assessment, the steering committee decided they would like to see the psychosocial risk profiles for:

- Each of the three day-shift work groups in the manufacturing plant
- The night shift in the manufacturing plant
- Each of the four call centre teams
- HR, Finance and Marketing as one work group
- Research and Development
- As the organisation was concerned about stress on their line managers, they decide to assess the risk profile for Line Managers.

When the risk profiles for these eleven work groups were analysed, it was clear that that those with the poorest psychological wellbeing were line managers (with work stressors identified as time pressure, work-group conflict, and inadequate reward and recognition) and those working in the call centre (with work stressors identified as time pressure, emotional demands and lack of control). The specificity of this risk assessment allowed for a risk-control plan to be targeted to the work stressors unique to each of these two different work groups/occupations.

4.6.5   Use reliable methods for risk assessment

Assessing risks associated with psychosocial hazards is most commonly done using focus groups and/or worker surveys. Where either of these methods is used it is important that they focus on the work stressors that have empirical links with health outcomes as outlined above. Proprietary surveys have been developed to assess a myriad of outcomes in the workplace, including physical and mental health, emotional exhaustion or 'burnout,' workplace accidents, employee wellbeing, job satisfaction, productivity, engagement, morale, turnover, absenteeism and distress. Although these outcomes may be important to employers, and therefore could be used as a lever to evoke behaviour change, OHS professionals' primary purpose is to prevent illness and injury. Therefore, the single most important factor for choice of assessment method is its ability to reliably and validly assess the risk of illness and injury. Further, it is important that assessment tools can reliably and validly identify and assess significant (non-trivial) work stressors.

In 2001, a review of psychosocial-hazard measures (Rick, Briner, Daniels, Perryman & Guppy, 2001) identified limitations to the reliability and validity of many tools. In response to this, the UK Health and Safety Executive (HSE) produced a worker survey that is freely available for use and is based on six work stressors (Demand, Control, Support, Roles, Relationships and Change) (Cousins, Mackay, Clarke, Kelly, Kelly & McCaig, 2004). This 'Management Standards' framework, which has been in place in the UK since 2002, allows organisations to compare their performance to UK benchmarks sourced from five (predominantly public sector) high-risk industries. In addition to the HSE assessment tool and the many others identified by Rick et al. (2001), the National Institute of Occupational Health (NIOH) in Denmark developed the Copenhagen Psychosocial Questionnaire (COPSOQ) for assessing psychosocial work environment factors (Kristensen, Hannerz, Høgh & Borg, 2005). The COPSOQ encompasses categories focused on job 'tasks,' 'social and organisational' aspects of the job, and 'individual' or personality factors.

In Australia, a consortium of OHS regulators and universities developed the 'People at Work' survey, a dedicated risk-assessment tool for psychological injury, which has associated Australian normative data on 10 of the 12 work stressors discussed in section 4 (see for example, Way, Jimmieson & Bordia, 2010). Also, the 'Australian Workplace Barometer,' designed as a national surveillance system, measures several of these work stressors (Dollard & Skinner, 2007).

4.6.6   Realistic timeframes

Finally, it is important for managers and workers to have realistic notions of the timeframes for assessment and implementation of risk-control plans, and the lag times for interventions to take effect. The assessment and implementation process can take 12–18 months (depending on factors such as the size of the organisation) from initial

organisational commitment to action through to implementation of risk control plans. The average lag/post intervention evaluation is also something to consider. Research into this area found the average lag time for individual interventions was nine weeks and was thirty-eight weeks for organizational interventions (van der Klink et al., 2001). Giga et al., (2003a) argues for continual evaluation whereas de Lange et. al. (2003) argues for at least 1 year, depending on what intervention is being conducted and basing the decision on theoretical considerations. In a complex system, it is perhaps unrealistic to expect change to last forever (Semmer, 2003) - the dynamicism of organizations can mean changes such as a new supervisor or new colleagues and changes in the prevailing economic or political climate. These can make marked and unplanned alterations in stress responses of workers.

5   Risk control

So what has been done in organisations to respond to psychosocial hazards at work? As well as a plethora of individual studies, several reviews of occupational stress interventions have been conducted in the last 15 years (Caulfield et al., 2004; Cox & Griffith, 2000; Giga et al., 2003b; Kompier & Cooper, 1999; Murphy, 1996; Quick et al., 1997; Semmer, 2003; VanDer Kink et al., 2001). Overall, there is reason to be optimistic about the effectiveness of interventions as long as they are targeted accurately, use appropriate processes, and are clear and realistic about intended outcomes.

Intervention types studied have been many and varied, and are classified in different ways. LaMontagne, Keegel, Louie, Ostry and Landsbergis (2007b) studied the efficacy of primary, secondary and tertiary interventions (Figure 2) and found that primary prevention had the greatest efficacy in reducing job stress (Table 2).

Table 2: A systems approach to job stress (LaMontagne et al., 2007b, p. 269)

Intervention Level	Effect Rating	Intervention Targets	Examples
1. Primary (Preventative) Goal: reducing the nature of the stressor before employees experience stress-related symptoms or disease	+++	Stressors at their source; organisation of work; working conditions	job redesign; workload reduction; improved communication
2. Secondary (Ameliorative) Goal: to help equip employees with resources to cope with stressful conditions	++	Employee responses to stressors	cognitive behavioural therapy; coping classes; anger management

3. Tertiary (Reactive) Goal: to treat, compensate, and rehabilitate employees with enduring stress-related symptoms or disease	+		Enduring adverse health effects of stressors	return-to-work programs; occupational therapy; medical therapy

A different classification structure proposed by de Frank and Cooper (1987) included interventions targeted at:

a) The *individual level* – where they are aimed at assisting individuals to cope or build resilience. This includes activities such as training in resilience, stress and coping, relaxation or cognitive behavioural interventions (CBT)

b) The *individual/organisational interface level* – where they are aimed at improving the fit between the person and the organisational system. This includes activities such as improving interpersonal skills, job demand monitoring and improving role clarity

c) The *organisational level* – where they are aimed at altering parts or components of the organisational system itself. This includes activities such as work redesign, improving management commitment, organisational communication, improving work content and managing change.

Table 3 provides a list of possible types of interventions, categorised using this framework.

Table 3: Overview of types of work-stress interventions classified according to de Frank and Cooper's (1987) level of intervention classification[#]

Level	Intervention*
Organisational	Improving work content Management commitment Management training Selection and placement Physical and environment characteristics Communication Job design/restructuring including hours of work and shift/roster design Improving decision making Conflict management systems Policies and procedures
Individual-organisational interface	Time management, improving interpersonal skills, work/home balance Supervisor skills Job demand monitoring Role issues (ambiguity and conflict) Participation and autonomy Peer support groups, coaching, career planning Pre-employment medical examination Selection and placement
Individual	Individual psychotherapy including didactic stress management, CBT Relaxation Meditation

	Biofeedback
	EAS – supportive counselling, CISD
	Stress management, resilience and fatigue management training
	Exercise
	Time management
	Rehabilitation after sick leave
	Disability management/case management
Industry level	Awareness raising interventions
	Promotional materials
	Advertising – health promotion
	Regulation
	Incentives
	Media

\# Intervention types summarised from multiple sources (including Giga et al., 2003a; Cox et al., 2000; De Jonge & Dollard, 2002)

*It is possible that some interventions fit into two of these categories (depending on how they are targeted and what their aims are) – this is why the individual./organisational interface category is sometimes omitted.

A theme evident in the literature is that the majority of interventions conducted in organisations have been individually focused and targeted towards helping those already distressed. This was the case for interventions in Australia (Caulfield et al., 2004) and internationally (Giga et al., 2003b; Kompier & Cooper, 1999; LaMontagne, 2001; VanDer Kink et al., 2001). This tendency may be indicative of an underlying belief that experiencing work strain is a consequence of inadequate coping mechanisms of individuals rather than looking to potential work contributors to the risk of injury. It may further signal that organisations are not yet sharing responsibility for workers' stress responses. However, it may be due also to lack of knowledge regarding how to best control the risk and/or to the belief that individual-level interventions are easier to implement than organisational interventions. Whatever the cause, continuing to focus interventions on bolstering individual coping at the expense of organisational-level interventions is not in line with modern OHS practice.

In summary, in addition to general principles (section 4) that should permeate the entire risk-management process, risk-control plans should embrace the following factors:

- Activities to control the risk should be organisation and work-group specific, and be adapted to the needs, cultures, politics and economic realities of the organisation/work group
- Activities to control the risk should be targeted to problem work stressors identified via risk assessment
- Risk-control plans should focus on primary prevention, but also include secondary and tertiary prevention activities
- Risk-control plans should focus on organisational-level interventions, but also include individual-level interventions
- A focus on worker training, including mental health training, or off-the-shelf risk-control interventions is unlikely to ensure health and safety.

Case Example 2

A large, 100+ seat inbound call centre has been getting feedback from the Australian Services Union that their members are dissatisfied with working conditions. The most recent manifestation of this was the presentation of a letter, signed by 80 workers, itemising complaints relating to stress, inability to meet targets, not enough time to go to the toilet, and severe and unjust consequences for workers for minor discretions. This was on top of several individual bullying complaints that had been investigated and 'resolved,' but that had impacted negatively on worker morale.

In response to this, the company decides to undertake a systematic risk assessment and implement relevant controls to manage risks to health and safety. With the union's support, they:

1. Inform workers of the process and invite them to be active participants.
2. Form a steering committee with representatives from a vertical slice of the organisation, including workers, team leaders, union representatives, senior managers, and WHS and HR practitioners.
3. They undertake an analysis of absenteeism, turnover and grievances, identifying trends in peak absenteeism and turnover times and locations within the centre. They find:
   a. That absenteeism peaks at the time of the monthly performance reviews when there is implementation of new business practices, such as introduction of the new IT system, and at times of high work demand, such as end of financial year
   b. That absenteeism is trending upwards, costing almost half a million dollars per year
   c. That both absenteeism and turnover are higher in certain work groups.
4. Conduct a staff survey asking specific questions about wellbeing and associated work stressors. They take an existing survey that will allow them to benchmark against other organisations, and add some additional items (specific to the type of work they conduct and the issues raised by workers). In addition to measurement of the work stressors of work demands, control, support, roles, relationships, change, recognition, and reward and justice, they add: perceived achievability of targets, dealing with difficult/aggressive clients, KPIs and Performance Reviews (including the use of electronic performance monitoring, and the frequency and quality of performance reviews).
5. Interview team leaders, call centre managers, and workers in HR, WHS, RTW and training and development roles, focusing questions on perceived work stressors and ideas for improvements.
6. Provide interim results of the risk assessment to the steering committee.
7. Run focus groups with worker representatives to:
   a. Provide results of the survey to staff
   b. Seek worker input to clarify issues raised in the survey
   c. Develop a risk-control plan with worker input.
8. Finalise the risk-control plan and present it to the steering committee for sign off. The risk-control plan includes five major (along with various smaller) activities:
   a. As 80% of staff are currently not meeting KPI, a participative review of targets will be conducted; targets will be reviewed regularly with staff input
   b. A review of the performance-management process will be undertaken, including the reasonable use of electronic performance monitoring, frequency of performance feedback and fairness around performance management; line managers will be provided with training and live coaching regarding performance management and review
   c. Weekly standing team meetings will be instituted where workers have an opportunity to have input into their working conditions and raise concerns
   d. Line-manager competencies for occupational stress will be assessed and they will work participatively to develop these
   e. Workplace bullying policies will be drafted and implemented; line managers and staff will attend training to ensure they have the capacity to minimise risks associated with bullying and know how to respond appropriately should bullying issues be raised; monitoring and review processes for this are to be implemented.
9. Monitor implementation of the risk-control plan (i.e. by the steering committee).
10. Review improvements on a regular basis by checking with line managers and staff in weekly meetings, but formally review improvements in twelve months time by conducting another staff survey.

6   Implications for OHS practice

The implications for OHS practice are many and varied; this section will discuss a limited number of these.

6.1   High-risk occupations

Safe Work Australia's (2010) *Occupational Disease Indicators* provides occupational-level data relevant to the incidence of mental disorders. In the three-year period from 2004–05 to 2006–07, train drivers and assistants, police officers, prison officers, ambulance officers and paramedics, nurse managers, social workers, welfare and community workers, secondary school teachers, special education teachers, education managers, firefighters, registered mental health nurses, and bus and tram drivers had the highest rates of claims for mental disorders. These occupations also tend to have high exposure to work stressors, including, for example, emotional demands, violence/aggression and hours of work (shift work).

6.2   Interactions between psychosocial hazards and HR practices, IR matters and line-management skills

Risk management for psychosocial hazards often has implications for, and overlaps with, other areas of organisational concern including industrial relations (IR) and human resources (HR). Indeed, sometimes risk factors are directly within the domain of these areas of practice. Risk factors such as hours of work (and shift work), organisational (in)justice, and how management responds to issues such as workplace conflict and change, can be sources of job dissatisfaction, grievances and industrial disputes (see Case Example 3). For this reason, it is important that OHS professionals work closely with practitioners in the HR and IR areas of the organisation as a multidisciplinary approach to psychological hazards. For complex risk management scenarios it can be beneficial to engage professionals with specialist skills in psychosocial risk management (e.g. organisational psychologists or occupational physicians).

6.3   Return-to-work implications

The influence of psychosocial factors in delaying return to work after injury is well established with the medical profession now encouraged to assess psychosocial factors as a prognostic factor. A system of flags indicating possible obstacles to recovery includes psychosocial factors (Kendell, Linton & Main, 1997) (Figure 4).
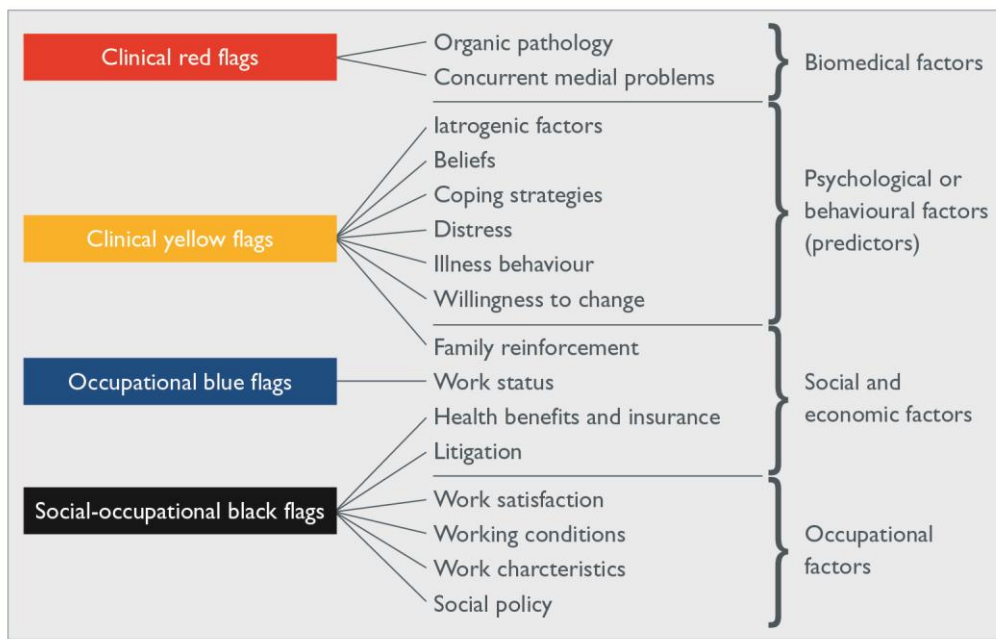
Figure 4: The clinical flags approach to obstacles to recovery from back pain and aspects of assessment (Kendell, Linton & Main, 1997, adapted by Main & Williams, 2002, p. 535)

In practice, this means that it is important for OHS professionals to work closely with return-to-work and disability-management practitioners to ensure that any risks associated with psychosocial hazards in the relevant work team are identified, assessed, controlled and monitored in any return-to-work scenarios.

Case Example 3

Charles, an older worker, is a machinist in a metal fabrication plant. He had been working for the company for many years when he put in a worker's compensation claim for a musculoskeletal injury to his neck. When the return-to-work coordinator contacted Charles to facilitate a graduated return-to-work program, Charles stated he was happy to go back to work, but did not want to work the same shift as Sam, another machinist.

Charles's son, Logan, worked at the same workplace and had been in a long-running conflict with Sam; this had culminated in Logan making allegations that Sam had been bullying him, and had been stealing stock and selling it online. Sam, on the other hand, alleged that Logan had made comments regarding his integrity on a social networking site and had made threats to his safety. Sam had raised these issues with the company owner and the case was being investigated by the police. Subsequently, Logan resigned from the company and investigation of the bullying complaint and stealing allegations provided no evidence of wrongdoing by Sam.

Charles was told that it could not be guaranteed that he could work different shifts to Sam. The following day, Charles worked half a shift, but had to leave early as his neck 'was really playing up.' Charles went to see his treating medical practitioner, who confirmed the neck pain was not yet resolved. He remained off work for a further 5 weeks.

6.4 Workers with mental illness

Given the prevalence of mental illness in the community, it is relatively commonplace for managers and employees to work alongside someone who has a mental illness. Consequently, in every workplace:

- Management, and the workforce in general, should have an understanding of mental illness
- Reasonable adjustment obligations under the anti-discrimination legislation should be met
- Steps should be taken to create a healthy and safe work environment for everyone at the workplace
- It should be recognised that effective communication skills are integral, particularly for line managers
- Support and coaching for line managers should be made available as needed
- Performance management and team dynamics considerations should be made.

This is a complex area, the nuances of which cannot be adequately dealt with in this chapter; however, for further information see the Australian Human Rights Commission (2010).

7 Summary

This chapter has introduced the concept of psychosocial hazards and addressed it from the perspective of work-related stress. After brief consideration of the historical context and extent of the problem, the chapter outlined key aspects of psychosocial hazards and their consequences. It presented a framework for conceptualising twelve psychosocial risk factors, and reviewed relevant risk-assessment and risk-control processes. Finally, implications for OHS practice were discussed.

Key authors and thinkers

Carey Cooper, Tom Cox, Amanda Griffiths, Anthony LaMontagne
Michael Marmot (Whitehall II Studies)
R. Karasek and T. Theorell (Job Demand-Control-Support model, 1990)
J. Siegrist (Effort-Reward Imbalance model, 1998)
P. Cotton and P. M. Hart (The Organisational Health Framework) (2001, 2003)
C. Maslach and S. E. Jackson (Burnout, 1981, 1984)
van Veldhoven et al. (Demand-Skill-Support model, 2005)
R. S. Lazarus and S. Folkman (Cognitive Appraisal model, 1984)

P. Warr (Vitamin model, 1994)

E. Demerouti, A. B. Bakker, F. Nachreiner and W. B. Schaufeli (Job Demands-Resources model, 2001)

Major psychosocial policy frameworks/directions:

Health and Safety Executive (UK) Framework (Mackay et al., 2004; Cousins et al., 2004)

Luxenbourg Declaration, 1997

Tokyo Declaration, 1998

PRIMA-EF Guidance on the European Framework for Psychosocial Risk Management: A Resource for Employers and Worker Representatives (Leka & Cox, 2008)

WHO Social Determinants of Health

References

ABS (Australian Bureau of Statistics). (2006). *4824.0.55.001 – Mental Health in Australia: A Snapshot, 2004–05.* Retrieved from http://www.abs.gov.au/ausstats/abs@.nsf/mf/4824.0.55.001

Australian Human Rights Commission. (2010). *Workers with Mental Illness: a Practical Guide for Managers.* Retrieved from www.hreoc.gov.au/disability_rights/publications/workers_mental_illness_guide.html

Adams, J. S. (1965). Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 267-299). San Diego: Academic Press.

Bakker, A. B., Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology, 22*(3), 309–328.

Beehr, T. A., Farmer, S. J., Glazer, S., Gudanowski, D. M., Nair, V. N. (2003). The enigma of social support and occupational stress: Source congruence and gender role effects. *Journal of Occupational Health Psychology*, *8*(3), 220–231.

Bies, R. J., Moag, L. S. (1986). Interactional justice: Communication criteria of fairness. In R. J. Lewicki, B. H. Sheppard & B. H. Bazerman (Eds.), *Research on negotiation in organizations* (Vol. 1, pp. 43-55). Greenwich: JAI Press.

Bishop, G. D., Enkelmann, H. C., Tong, E. M., Why, Y. P., Diong, S. M., Ang, J., & Khader, M. (2003). Job demands, decisional control, and cardiovascular responses. *Journal of Occupational Health Psychology, 8*(2), 146–156.

Bolger, N., DeLongis, A., Kessler, R. C., & Schilling, E. A. (1989). Effects of daily stress on negative mood. *Journal of Personality and Social Psychology, 57,* 808-818.

Bromet, E. J., Dew, M. A., Parkinson, D. K., Schulberg, H. C. (1988). Predictive effects of occupational and marital stress on the mental health of a male workforce. *Journal of Organizational Behavior, 9*(1), 1–13.

Brotheridge, C. M. (2003). The role of fairness in mediating the effects of voice and justification on stress and other outcomes in a climate of organizational change. *International Journal of Stress Management, 10*(3), 253-268.

Brotheridge, C. M., Grandey, A. A. (2002). Emotional labor and burnout: Comparing two perspectives of "people work." *Journal of Vocational Behavior, 60*(1)*,* 17–39.

Bunker, S. J., Colquhoun, D. M., Esler, M. D., Hickie, I. B., Hunt, D., Jelinek, V. M. et al. (2003). "Stress" and coronary heart disease: Psychosocial risk factors. *Medical Journal of Australia, 178*(6), 272–276.

Caulfield, N., Chang, D., Dollard, M. F., & Elshaug, C. (2004). A review of occupational stress interventions in australia. *International Journal of Stress Management, 11*(2), 149-166.

Cotton, P. Hart, P. (2003). Occupational wellbeing and performance: A review of organizational health research. *Australian Psycholigist, 38:2*, 118-127.

Cotton, P., Hart, P. M. (2003). Occupational wellbeing and performance: A review of organisational health research. *Australian Psychologist, 38*(2), 118–127.

Cousins, R., Mackay, C. J., Clarke, S. D., Kelly, C., Kelly, P. J., McCaig, R. H. (2004). 'Management standards' and work-related stress in the UK: Practical development. *Work & Stress, 18*(2), 113–136.

Cox, T., Griffiths, A. (2000). *Occupational Stress Interventions*. Sudbury: HSE Books.

Cox, T., Griffiths, A., Rial-González, E. (2000). *Research on Work-related Stress.* European Agency for Safety and Health at Work. Luxembourg: Office for Official Publications of the European Communities. Retrieved from http://osha.europa.eu/en/publications/reports/203

CSDH (Commission on Social Determinants of Health). (2008). *Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health* (Final Report). Geneva: World Health Organization.

Darr, W., Johns, G. (2008). Work Strain, Health, and Absenteeism: A Meta-Analysis. *Journal of Occupational Health Psychology, 13*(4), 293-318.

De Frank, R. S., & Cooper, C. L. (1987). Worksite stress management interventions: Their effectiveness and conceptualization. *Journal of Managerial Psychology, 2*, 4-10.

De Jonge, Dollard, M. (2002) *Stress in the workplace*: Australian Master OHS and Environment Guide, CCH

de Lange, A. H., Taris, T. W., Kompier, M. A., Houtman, I. L., Bongers, P. M. (2003). "The *very* best of the millennium": Longitudinal research and the demand-control-(support) model. *Journal of Occupational Health Psychology*, *8*(4), 282–305.

Dembe, A.E., Erickson, J.B., Delbos, R.G. Banks, S.M. (2004). The impact of overtime and long hours on occupational injuries and illnesses: New evidence from the United States. *Occupational and Environmental Medicine, 62*, 588-597.

Demerouti, E., Bakker, A. B., Nachreiner, F., Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*(3), 499–512.

Devereux, J. J., Vlachonikolis, I. G., Buckle, P. W. (2002). Epidemiological study to investigate potential interaction between physical and psychosocial factors at work that may increase the risk of symptoms of musculoskeletal disorder of the neck and upper limb. *Occupational & Environmental Medicine, 59*(4), 269–277.

Direct Health Solutions. (2009). National Health and Absence Survey. Retrieved from http://dhs.net.au/

Dollard, M. F., Skinner, N. J. (2007). Throw-away workers or sustainable workplaces? The Australian workplace barometer. In *A Healthy Society: Safe, Satisfied and Productive. The Proceedings of the 43rd Annual Conference of the Human Factors and Ergonomics Society of Australia* (pp. 21–30). Perth, WA: HFESA.

Einarsen, S. (1999). The nature and causes of bullying at work. *International Journal of Manpower, 20,* 16-27.

Elovainio, M., Kivimäki, M., Vahtera, J., Virtanen, M., Keltikangas-Järvinen, L. (2003). Personality as a moderator in the relations between perceptions of organizational justice and sickness absence. *Journal of Vocational Behavior, 63*(3), 379-395.

Engstrom, T., Hanse, J. J., Kadefors, R. (1999). Musculoskeletal symptoms due to technical preconditions in long cycle time work in an automobile assembly plant: A study of prevalence and relation to psychosocial factors and physical exposure. *Applied Ergonomics, 30*(5), 443–453.

Giga, S. I., Cooper, C. L., Faragher, B. (2003a). The Development of a Framework for a Comprehensive Approach to Stress Management Interventions at Work. *International Journal of Stress Management, 10*(4), 280-296.

Giga, S., Garagher, B., & Cooper, C. (2003b). Identification of good practice in stress prevention/management. In J. Jordan, E.. Gurr, G. Tinline, S. Giga, B. Faragher, S. Cooper (Eds), *Beacons of Excellence in Stress Prevention. (HSE Research Report 133, pp. 1-45).* Sudbury, England: HSE Books.

Gilbreath, B., & Benson, P. G. (2004). The contribution of supervisor behaviour to employee psychological well-being. *Work and Stress, 18*(3), 255-266.

Gold, D.R., Rogacz, S., Bock, N., Tosteson, T.D., Baum, T.M., Speizer, F.E. Czeisler, C.A. (1992). Rotating shift work, sleep and accidents related to sleepiness in hospital nurses. *American Journal of Public Health, 82*(7), 1011-1013.

Greenberg, J. (1993). The social side of fairness: Interpersonal and informational classes of organizational justice. In R. Cropanzano (Ed.), *Justice in the workplace:*

Approaching fairness in human resource management (pp. 79–103). Hillsdale, NJ: Lawrence Erlbaum.

Hagen, K. B., Magnus, P., & Vetlesen, K. (1998). Neck/shoulder and low-back disorders in the forestry industry: Relationship to work tasks and perceived psychosocial job stress. *Ergonomics, 41*(10), 1510–1518.

Hall, G. B., Dollard, M. F & Coward, J. (2010) Psychosocial safety climate: Development of the PSC-12. International Journal of Stress Management, 17(4), 353-383.

Head, J., Martikainen, P., Kumari, M., Kuper, H., & Marmot, M. (2002). *Work Environment, Alcohol Consumption and Ill-Health: The Whitehall II Study* (Contract Research Report 422/2002). Suffolk, UK: HSE Books. Retrieved from http://www.hse.gov.uk/research/crr_pdf/2002/crr02422.pdf

Heinrichs, M., Baumgartner, T., Kirschbaum. C., & Ehlert, U. (2003). Social support and oxytocin interact to suppress cortisol and subjective responses to psychosocial stress. *Biological Psychiatry, 54 (12),* 1389-1398.

Jackson, P. R., Wall, T. D., Martin, R., & Davids, K. (1993). New measures of job control, cognitive demand, and production responsibility. *Journal of Applied Psychology*, *78*(5), 753–762.

Janssen, O. (2003). Innovative behaviour and job involvement at the price of conflict and less satisfactory relations with co-workers. *Journal of Occupational and Organizational Psychology, 76*(3), 347-364.

Janssen, N., Kant, I.J., Swaen, G.M.H., Janssen, P.P.M. & Schroer, C.A.P. (2002). Fatigue as a predictor of sickness absence: Results from the Maastricht cohort study on fatigue at work. *Occupational and Environmental Medicine, 60*(Supplement 1), 71-76.

Jex, S. M. (1998). Stress and job performance: Theory, research, and implications for managerial practice. Thousand Oaks, CA: Sage.

Jex, S. M., & Beehr, T. A. (1991). Emerging theoretical and methodological issues in the study of work-related stress. *Research in Personnel and Human Resources Management, 9*, 311-365.

Jimmieson, N. L. (2010). Employee reactions to behavioural control under conditions of stress: The moderating role of self-efficacy. *Work & Stress, 14(3),* 262-280.

Jimmieson, N. L., Terry, D. J., & Callan, V. J. (2004). A longitudinal study of employee adaptation to organizational change: The role of change-related information and change-related self-efficacy. *Journal of Occupational Health Psychology*, *9*(1), 11–27.

Johnstone, R., Quinlan, M., & McNamara, M. (2011). OHS inspectors and psychosocial risk factors: Evidence from Australia. *Safety Science*, *49*(4), 547–557.

Kahn, R. L., & Byosiere, P. (1992). Stress in organizations. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology, Vol. 3 (2nd ed.).* (pp. 571-650). Palo Alto, CA: Consulting Psychologists Press.

Karasek, R., & Theorell, T. (1990). *Healthy work: Stress, productivity, and the reconstruction of working life*. New York, NY: Basic Books.

Kendall, N. A., Linton, S. J., & Main, C. J. (1997). *Guide to Assessing Psychosocial Yellow Flags in Acute Low Back Pain: Risk Factors for Long-Term Disability and Work Loss.* Wellington, New Zealand: Accident Rehabilitation & Compensation Insurance Corporation of New Zealand and the National Health Committee, Ministry of Health.

Kivimäki, M., Leino-Arjas, P., Luukkonen, R., Riihimäki, H., Vahtera, J., & Kirjonen, J. (2002). Work stress and risk of cardiovascular mortality: Prospective cohort study of industrial employees. *British Medical Journal, 325*(7369), 857.

Komper, M. A. J. (2002). Job design and well-being. In M. Schabracq, J. Winnubst, & C. Cooper (Eds). *Handbook of work and health psychology* (PP. 429-454). Chichester, England: Wiley.

Kompier, M. A. J., & Cooper, C. L. (1999). *Preventing stress, improving productivity: European case studies in the workplace*. London: Routledge.

Kompier, M. A. J., Geurts, S A. E., Grundemann, R. W. M., Vink, P. & Smulders, P. G. W. (1998). Cases in Stress prevention: The success of a participative and stepwise approach. *Stress Medecine, 14,* 155-168.

Koopman, C., Pelletier, K. R., Murray, J. F., Sharda, C. E., Berger, M. L., Turpin, R. S., Hackleman, P., Gibson, P., Holmes, D. M., & Bendel, T. (2002). Stanford presenteeism scale: Health status and employee productivity. *Journal of Occupational & Environmental Medicine, 44*(1), 14–20.

Koslowsky, M. (1998). *Modeling the stress-strain relationship in work settings*. Florence, KY: Taylor & Frances/Routledge.

Kristensen, T. S., Hannerz, H., Høgh, A., & Borg, V. (2005). The Copenhagen Psychosocial Questionnaire (COPSOQ) – a tool for the assessment and improvement of the psychosocial work environment. *Scandinavian Journal of Work, Environment & Health, 31*(6), 438–449.

Kuper, H., & Marmot, M. (2003). Job strain, job demands, decision latitude, and risk of coronary heart disease within the Whitehall II study. *Journal of Epidemiology & Community Health*, *57*(2), 147–153.

LaMontagne, A. D. (2001). *Evaluation of occupational stress interventions: An overview*. Paper presented at the NOHSC Symposium on the OHS Implications of Stress, Canberra.

LaMontagne, A. D., Keegel, T., & Vallance, D. (2007a). Protecting and promoting mental health in the workplace: Developing a systems approach to job stress. *Health Promotion Journal of Australia*, *18*(3), 221–228.

LaMontagne, A. D., Keegel, T., Louie, A. M., Ostry, A., & Landsbergis, P. A. (2007b). A systematic review of the job-stress intervention evaluation literature, 1990–2005. *International Journal of Occupational & Environmental Health, 13*(3), 268–280.

LaMontagne, A. D., Keegel, T., Vallance, D., Ostry, A., & Wolfe, R. (2008). Job strain – attributable depression in a sample of working Australians: Assessing the contribution to health inequalities. *BMC Public Health, 8*, 181.

LaMontagne AD, Sanderson K, & Cocker F (2010): *Estimating the economic benefits of eliminating job strain as a risk factor for depression: summary report*. Victorian Heath Promotion Foundation (VicHealth), Melbourne.

Landsbergis, P. A., Schnall, P. L., Belkic, K. L., Baker, D., Schwartz, J. E., & Pickering, T. G. (2003). The workplace and cardiovascular disease: Relevance and potential role for occupational health psychology. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 265–287). Washington, DC: American Psychological Association.

Lazarus, R. S. (1990). Stress, coping, and illness. In H. S. Friedman (Ed.), *Personality and disease. Wiley series on health psychology/behavioral medicine.* (pp. 97-120). Oxford, England: John Wiley & Sons.

Lazarus, R. S., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. New York: Springer.

Leka, S., & Cox, T. (2008). *PRIMA-EF Guidance on the European Framework for Psychosocial Risk Management: A Resource for Employers and Worker Representatives* (Protecting Workers' Health Series No. 9). Retrieved from http://www.who.int/occupational_health/publications/PRIMA-EF%20Guidance_9.pdf

Leka, S., Griffiths, A., & Cox, T. (2003). *Work Organisation and Stress: Systematic problem approaches for employers, managers and trade union representatives. (Protecting Worker Health Series; Vol 3).* Geneva: World Health Organisation.

Leventhal, G. S. (1976). The distribution of rewards and resources in groups and organizations. . In L. Berkowhz & E. Walster (Eds.), *Advances in experimental social psychology* (Vol. 9, pp. 91-131). San Diego: Academic Press.

Leventhal, G. S. (1980). What should be done with equity theory? New approaches to the study of fairness in social relationships. In K. J. Gergen, M. S. Greenberg & R. H. Willis, *Social exchange: Advances in theory and research* (pp. 27–55). New York, NY: Plenum.

Lingard, H. & Francis, V. (2004). The work-life experiences of office and site-based employees in the Australian construction industry. *Construction Management and Economics Quarterly, 22*, 991-1002.

Mackay, C. J., Cousins, R., Kelly, P. J., Lee, S., & Mccaig, R. H. (2004). 'Management Standards' and work-related stress in the UK: Policy background and science. *Work & Stress, 18(2),* 91-112.

Main, C. J., & Williams, A. (2002). ABC of psychological medicine: Musculoskeletal pain. *British Medical Journal*, *325*(7363), 534–537.

Maslach, C. & Jackson, S. E. (1981). The measurement of experienced burnout. *Journal of Organizational Behavior, 2 (2).* 99–113.

Maslach, C. and Jackson, S. E. (1984). 'Burnout in organizational settings', *Applied Social Psychology Annual*, **5**, 153–153.

Murphy, L. R. (1996). Stress management in work settings: A critical review of the health effects. *American Journal of Health Promotion, 11,* 112-135.

Niedhammer, I., Tek, M., Starke, D., & Siegrist, J. (2004). Effort-reward imbalance model and self-reported health: Cross-sectional and prospective findings from the GAZEL cohort. Social science & medicine, 58(8), 1531-1541.

Ohly, S., & Fritz, C. (2010). Work characteristics, challenge appraisal, creativity, and proactive behaviour: A multi-level study. *Journal of Organisational Behaviour, 31*(4), 543–565.

Pikhart, H., Bobak, M., Siegrist, J., Pajak, A., Rywik, S., & Kyshegyi, J. et al. (2001). Psychosocial work characteristics and self rated health in four post-communist countries. Journal of Epidemiology & Community Health, 55(9), 624-630.

Pikhart, H., Bobak, M., Pajak, A., Malyutina, S., Kubinova, R., & Topor, R. et al. (2004). Psychosocial factors at work and depression in three countries of central and eastern europe. Social science & medicine, 58(8), 1475-1482.

Quick, J. C., Quick, J. D., Nelson, D. L., & Hurrell (Jr), J. J. (Eds). (1997). *Preventive stress management in organizations.* Washington, DC: American Psychological Association.

Rick, J., Briner, R. B., Daniels, K., Perryman, S., & Guppy, A. (2001). *A Critical Review of Psychosocial Hazard Measures* (Contract Research Report 356/2001). The Institute of Employment Studies, University of Sussex, UK: HSE Books. Retrieved from http://www.hse.gov.uk/research/crr_pdf/2001/crr01356.pdf

Rick, J., Thomson, L., Briner, R. B., O'Regan, S., & Daniels, K. (2002). *Review of Existing Supporting Scientific Knowledge to Underpin Standards of Good Practice for Key Work-related Stressors – Phase 1* (Research Report 024). The Institute of Employment Studies, UK: HSE Books. Retrieved from http://www.hse.gov.uk/research/rrpdf/rr024.pdf

Rizzo, J. R., House, R. J., & Lirtzman, S. I. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly*, *15*(2), 150–163.

Safe Work Australia. (2010). *Occupational Disease Indicators*. Barton, ACT: Commonwealth of Australia. Retrieved from http://www.safeworkaustralia.gov.au/aboutsafeworkaustralia/whatwedo/publications/pages/rp201005occupationaldiseaseindicators2010.aspx

Safe Work Australia. (2011a). *Model Work Health and Safety Bill: Revised draft 23/6/11*. Canberra, ACT: Safe Work Australia.

Safe Work Australia. (2011b). *Compendium of Workers' Compensation Statistics Australia 2008–09*. Canberra, ACT: Commonwealth of Australia. Retrieved from http://safeworkaustralia.gov.au/AboutSafeWorkAustralia/WhatWeDo/Publications/Documents/570/Compendium_Workers_Compensation_Statistics_2008-09.pdf

Sainsbury Centre for Mental Health. (2007). *Mental Health at Work: Developing the Business Case* (Policy Paper 8). Retrieved from http://www.centreformentalhealth.org.uk/pdfs/mental_health_at_work.pdf

Schnurr, P. P., & Green, B. L. (Eds.). (2004). *Trauma and health: Physical health consequences of exposure to extreme stress.* Washington, DC: American Psychological Association.

Semmer, N. K. (2003). Job stress interventions and organization of work. . In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of occupational health psychology* (pp. 325-353). Washington, DC: American Psychological Association.

Selye, H. (1956). *The stress of life*. New York, NY, US: McGraw-Hill.

Siegrist, J. (1998). Adverse health effects of effort-reward imbalance at work. In C. Cooper (Ed.), *Theories of Organisational Stress*. Oxford: Oxford University Press.

Smith, C. S., & Sulsky, L. M. (1995). An investigation of job-related coping strategies across multiple stressors and samples. In L. R. Murphy, J. J. Hurrell, Jr., S. L. Sauter, & G. P. Keita (Eds.), *Job stress interventions* (pp. 109-123). Washington, DC: American Psychological Association.

Spector, P. E., Chen, P. Y., & O'Connell, B. J. (2000). A longitudinal study of relations between job stressors and job strains while controlling for prior negative affectivity and strains. *Journal of Applied Psychology, 85*(2), 211-218.

Spector, P. E., Fox, S., & Van Katwyk, P. T. (1999). The role of negative affectivity in employee reactions to job characteristics: Bias effect or substantive effect? *Journal of Occupational & Organizational Psychology*, *72*(2), 205–218.

Spector, P. E., & Jex, S. M. (1998). Development of four self-report measures of job stressors and strain: Interpersonal Conflict at Work Scale, Organizational Constraints Scale, Quantitative Workload Inventory, and Physical Symptoms Inventory. *Journal of Occupational Health Psychology, 3*(4), 356-367.

Sutton, R. I., & Kahn, R. L. (1986). Prediction, understanding, and control as antidotes to organisational stress. In J. W. Lorsch (Ed.), *Handbook of Organisational Behaviour* (pp. 272–285). Englewood Cliffs, CA: Prentice Hall.

Swaen, G.M.H., van Amelsvoort, L.G.P.M., Bültmann, U. & Kant, I.J. (2002). Fatigue as a risk factor for being injured in an occupational accident: Results from the Maastricht Cohort Study. *Occupational and Environmental Medicine, 60*(Supplement 1), 88-92.

Swanson, V., & Power, K. (2001). Employees' perceptions of organizational restructuring: The role of social support. *Work and Stress, 15,* 161-178.

Taris, T. W., Peelers, M. C. W., Le Blanc, P. M., Schreurs, P. J. G., & Schaufeli, W. B. (2001). From Inequity to Burnout: The Role of Job Stress. *Journal of Occupational Health Psychology, 6*(4), 303-323.

Torp, S., Riise, T., & Moen, B. E. (2001). The impact of psychosocial work factors on musculoskeletal pain: A prospective study. *Journal of Occupational & Environmental Medicine, 43*(2), 120–126.

Tsutsumi, A., Kayaba, K., Theorell, T., & Siegrist, J. (2001). Association between job stress and depression among Japanese employees threatened by job loss in a comparison between two complementary job-stress models. *Scandinavian Journal of Work, Environment & Health*, *27*(2), 146–153.

Van der Doef, M., & Maes, S. (1998). The job demand-control (-support) model and physical health outcomes: A review of the strain and buffer hypothesis. *Psychology and Health, 13,* 909-936.

van der Doef, M., & Maes, S. (1999). The job demand-control (-support) model and psychological well-being: A review of 20 years of empirical research. *Work & Stress, 13*(2), 87–114.

van Veldhoven, M., Taris, T. W., de Jonge, J., & Broersen, S. (2005). The relationship between work characteristics and employee health and well-being: How much complexity do we really need? International Journal of Stress Management, 12(1), 3-28.

van der Klink, J. J. L., Blonk, R. W. B., Schene, A. H., & Van Dijk, F. J. H. (2001). The benefits of interventions for work-related stress. *American Journal of Public Health, 91*(2), 270-276.

Vermunt, R., & Steensma, H. (2001). Stress and justice in organizations: An exploration into justice processes with the aim to find mechanisms to reduce stress. In R. Cropanzano (Ed.), *Justice in the workplace: From theory to practice (Vol. 2). Series in applied psychology.* (pp. 27-48). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Viswesvaran, C., Sanchez, J. I., & Fisher, J. (1999). The role of social support in the process of work stress: A meta-analysis. *Journal of Vocational Behavior, 54,* 314-334.

Warr, P. (1994). A conceptual framework for the study of work and mental health. *Work & Stress, 8*(2), 84-97.

Way, K., Jimmieson, N., & Bordia, P. (2010, July). People at work: Learning how to manage work-related psychological injury. In *Proceedings of the International Congress of Applied Psychology Conference, Melbourne, Australia*.

Wickens, C. D., Gordon, S. E., & Liu, Y. (1998). *An Introduction to Human Factors Engineering.* New York, NY: Longman.

Wilhelm, K., Kovess, V., Rios-Seidel, C., & Finch, A. (2004). Work and mental health. *Social Psychiatry & Psychiatric Epidemiology*, *39*(11), 866–873.

WHO (World Health Organization). (2011). *Mental Health*. Retrieved from http://www.who.int/mental_health/management/depression/definition/en/

WHSQ. (2010) . *Overview of Occupational Stress*. Retrieved from www.deir.qld.gov.au/workplace/resources/pdfs/occstress-overview.

Ylipaavalniemi, J., Kivimäki, M., Elovainio, M., Virtanen, M., Keltikangas-Järvinen, L., & Vahtera, J. (2005). Psychosocial work characteristics and incidence of newly diagnosed depression: A prospective cohort study of three different models. *Social Science and Medicine, 61*(1), 111-122.

Zapf, D., Vogt, C., Seifert, C., Mertini, H., & Isic, A. (1999). Emotion work as a source of stress: The concept and development of an instrument. *European Journal of Work & Organizational Psychology, 8*(3)*,* 371–400.