ASSESSING THE STRAIN EXPERIENCED BY MANAGERS AND
PROFESSIONAL AUSTRALIAN FOOTBALLERS USING AN AUGMENTED
JOB STRAIN MODEL

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Business and Law, Deakin University, in fulfillment of the requirements of

DOCTOR OF PHILOSOPHY

January 2002
CANDIDATE DECLARATION

I certify that the thesis entitled Assessing the Strain Experienced by Managers and Professional Australian Footballers Using an Augmented Job Strain Model, submitted for the degree of Doctor of Philosophy, is the result of my own research, except where otherwise acknowledged, and that this thesis in whole or in part has not been submitted for an award including a higher degree to any other university or institution.

Name: .................................................................

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ACCESS TO THESIS

I am the author of the thesis entitled Assessing the Strain Experienced by Managers and Professional Australian Footballers Using an Augmented Job Strain Model, submitted for the degree of Doctor of Philosophy.

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ABSTRACT

Generic models of job stress, such as the Job Strain Model (JSM), have recently been criticised for focusing on a small number of general work characteristics while ignoring those that are occupation-specific (Sparks & Cooper, 1999). However this criticism is based on limited research that has not examined the relative influence of all three dimensions of the JSM - job demand, job control and social support - and job-specific stressors. The JSM is the most commonly used model underpinning large-scale occupational stress research (Fox, Dwyer, & Ganster, 1993) and is regarded as the most influential model in the research on the psycho-social work environment, stress and disease in recent times (Kristensen, 1995). This thesis addresses the lack of information on the relative influence of the JSM and job-specific stressors by assessing the capacity of an augmented JSM to predict the strain experienced by managers and professional Australian footballers. The augmented JSM consisted of job-specific stressors in addition to the generic components of the model.

Managers and professional Australian footballers represent two very different occupational groups. While the day-to-day roles of a manager include planning, organising, monitoring and controlling (Carroll & Gillen, 1987), the working life of a professional Australian footballer revolves around preparing for and playing football (Shanahan, 1998). It was expected that the large differences in the work undertaken by managers and professional Australian footballers would maximise the opportunities for identifying job-specific stressors and measuring the extent that these vary from one group to the next. The large disparity between managers and
professional footballers was also used to assess the cross-occupational versatility of the JSM when it had been augmented by job-specific stressors.

This thesis consisted of three major studies. Study One involved a survey of Australian managers, while studies Two and Three focused on professional Australian footballers. The latter group was under-represented in the literature, and as a result of the lack of information on the stressors commonly experienced by this group, an in-depth qualitative study was undertaken in Study Two. The results from Study Two then informed the survey of professional footballers that was conducted in Study Three.

Contrary to previous research examining the relative influence of generic and job-specific stressors, the results only provided moderate support for augmenting the JSM with job-specific stressors. Instead of supporting the versatility of the augmented JSM, the overall findings reinforced the broad relevance of the original JSM. Of the four health outcomes measured in Studies One and Three, there was only one – the psychological health of professional Australian footballers – where the proportion of total variance explained by job-specific stressors exceeded 13%.

Despite the generally strong performance of the JSM across the two occupational groups, the importance of demand, control and support diminished when examining the less conventional occupation of professional football. The generic model was too narrow to capture the highly specific work characteristics that are important for this occupational group and, as a result, the job-specific stressors explained significantly more of the strain over and above that already provided by the generic model. These findings indicate that when investigating the stressors experienced by conventional occupational groups such as managers, the large amount resources required to identify job-specific stressors are unlikely to be cost-effective. In contrast, the influence of the
more situation specific stressors is significantly greater in unconventional occupations and thus the benefits of identifying these non-generic stressors are more likely to outweigh the costs.

Studies One and Three identified strong connections between job-specific stressors and important characteristics of the occupation being studied. These connections were consistent with previous research and suggest that before attempting to identify job-specific stressors, researchers need to first become familiar with the nature and context of the occupation.

The final issue addressed in this thesis was the role of work and non-work support. The findings indicate that the support provided by supervisors and colleagues was a significant predictor of wellbeing for both managers and professional footballers. In contrast, the level of explained strain accounted for by non-work support was not significant. These results indicate that when developing strategies to protect and enhance employee well-being, particular attention should be given to monitoring and, where necessary, boosting the effectiveness of work-based support.

The findings from this thesis have been fed back to the management and sporting communities via conference presentations and peer-reviewed journals (refer pp 220-221). All three studies have been presented at national and international conferences and, overall, were well received by participants. Similarly, the methods, results and major findings arising from Studies One and Two have been critiqued by anonymous reviewers from two international journals. These papers have been accepted for publication in 2001 and 2002 and feedback from the reviewers indicates that the findings represent a significant and unique contribution to the literature. The results of Study Three are currently under review by a sports psychology journal.
CHAPTER 1: INTRODUCTION

Statement of the Problem

One of the most commonly used transactional models underpinning large-scale occupational stress research is the theory known as the job demands-job control model or the Job Strain Model (Industry Task Force on Leadership and Management Skills, 1995). Developed by Karasek (1979), the Job Strain Model uses a two dimensional design involving job demands and job control to predict stress-related illness. This model proposes that when high job demands are combined with low control the risk of strain increases. Conversely, when job demands are matched with high levels of control, positive outcomes including motivation and learning are more likely to occur. The original Job Strain Model has been expanded to include social support following studies demonstrating the moderating effects of social support on job strain (Karasek and Theorell, 1990; Landsbergis et al., 1992). A key strength of the JSM is that it has been tested on an array of occupational groups (e.g. machine operators, carpenters, nurses, bank officers and managers) and has been shown to have predictive value (Karasek and Theorell, 1990).

Although the JSM has been shown to offer key insights into the work-strain relationship, it has recently been criticised for focusing on a narrow range of generic work characteristics. One of the risks of basing a job strain investigation on a small number of generic work characteristics is that there may be other situations or conditions that are equally stressful and yet are overlooked by the narrow scope of the model (Beehr et al 2000; Sparks & Cooper 1999). The failure to consider these job-specific factors could have far-reaching health consequences. Misinformed
interventions that do not adequately address the most significant sources of strain may exacerbate, rather than reduce, the human and economic costs associated with occupational stress. However the relative influence of generic and job-specific models has only recently emerged and not all generic models have been subjected to empirical tests. Much of the published research in this area has focused on the influence of role stressors (Bacharach & Bamberger, 1992; Beehr, Jex, Stacy, & Murray, 2000; Narayanan, Menon, & Spector, 1999) and there is limited information on the comparative influence of the generic variables contained in the JSM and the more situation-specific variables.

The limited information on the relative influence of the JSM and job-specific stressors has provided the major impetus for this study. The overall purpose of the proposed study is to identify the capacity of the JSM, that has been augmented by job-specific stressors, to predict the job satisfaction and psychological well-being experienced by two occupational groups; managers and professional Australian footballers.

Background to Research

The key reason for selecting managers and professional Australian footballers was that they represented two very different occupational groups. Management is a conventional occupation that represents seven percent of the Australian workforce (Australian Bureau of Statistics, 1999). Furthermore this occupation can be found in most organisations, regardless of industry type or organisational size (Industry Task Force on Leadership and Management Skills, 1995). In contrast, professional Australian football is a minority occupation that consists of little over 700 members (AFLPA, 1999). Management and professional football are also structured very
differently. Management is a late start-late leaving occupation whereby members generally enter this profession already with high levels of formalised education/training and extensive experience in a related non-managerial occupation (Herr & Cramer, 1996; Wash, 1995). By comparison professional Australian football is an early start-early leaving occupation that relies heavily on natural talent that has been nurtured from a young age. However the most noticeable difference between these occupations is reflected in the nature of the tasks typically undertaken by each group. While the day-to-day roles of a manager include a broad mix of planning, organising, monitoring and controlling (Carroll & Gillen, 1987), the working life of a professional Australian footballer is generally limited to preparing for and playing football (Shanahan, 1998).

It is expected that the large differences between managers and professional Australian footballers, particularly in terms of the work undertaken, would maximise the opportunities for identifying job-specific stressors and measuring the extent that these vary from one group to the next. The large disparity between managers and professional footballers is also designed to assess the versatility of the JSM when it has been augmented by job-specific stressors. If the augmented model proves to have strong predictive value within a conventional occupation, like managers, as well as a highly unconventional occupational group, like professional Australian footballers, then it is likely that the augmented model will also be relevant to those occupations that are situated somewhere in between these two extremes.

Significance of Research

The present study will make a number of important contributions to the job strain literature. Firstly, the proposed research will test the relative influence of the generic
work characteristics contained within the JSM and job-specific stressors. These findings will then provide a more accurate understanding of the work characteristics that are predictive of job strain. This enhanced understanding is critical for informing the development of more effective, needs-based stress prevention strategies.

This study will also provide key insights into the broader utility of the JSM. Previous research involving the JSM (e.g., Karasek & Theorell, 1990; Fox et al., 1993) has tended to focus on large, conventional occupational groups such as nurses, teachers and managers. Consequently, little is known about the ability of this model to explain the strain experienced by minority occupations that are structured according to less conventional characteristics. The unconventional characteristics of professional sport, including an early start-early leaving career structure, a heavy emphasis on natural talent and the high level of performance scrutiny, may result in stressful work conditions that equal or surpass the influence of the JSM. Examining the influence of these characteristics, relative to the influence of the JSM, would therefore provide valuable information on the ability of this model to explain the strain experienced by conventional and unconventional occupations.

Providing that job-specific stressors are found to be predictive of strain, this study will also help better understand the extent that job-specific stressors vary between occupations and the degree that they are an extension of the work characteristics that are important in each occupation. Examining the connection between important work characteristics and job stressors will help researchers and practitioners determine the extent that important work characteristics need to be identified early in the research process.

Finally, this study will assess the contribution made by work and non-work sources of social support. There are conflicting findings on the importance of each source in
preventing or reducing occupational stress. When combined with previous research, this study will therefore provide more clarity on the usefulness of work and non-work support.

Overview of Research

The present investigation will be divided into three studies. Study One will assess the capacity of the JSM and job-specific stressors to predict the strain experienced by managers. Although this study will be primarily quantitative, the job-specific stressors measured in this study will be informed by a small qualitative study aimed at identifying the sources of stress that are most relevant to this occupational group.

Although Study One will help identify the relative influence that generic and job-specific characteristics will have on the strain experienced by managers, these results would be limited to this occupational group. Consequently, this study would not shed light on the cross-occupational relevance of the augmented JSM nor would it show how job-specific stressors might vary between occupations. To this end, Studies Two and Three will examine the generic and job-specific stressors experienced by the second occupational group; professional Australian footballers. This is an unconventional occupation that is under-represented in the occupational stress literature. As a result, an in-depth qualitative study will be undertaken in Study Two. This study will employ a series of one-to-one interviews and focus groups to identify the types of situations, conditions or events that professional Australian footballers find stressful.

The results from Study Two will inform the development of a football-specific self-report scale that will be used in Study Three. In the third study, a survey of
professional footballers will be undertaken. The aim of this survey will be to assess the ability of the JSM and the job-specific stressors to predict the strain experienced by this group. The results of Studies One and Three will then be examined to measure the overall versatility of the augmented JSM.
CHAPTER 2: LITERATURE REVIEW

The aims of this study have been based on a comprehensive review of the literature. The results of this review will be presented in the following chapter. This chapter has been divided into eight sections.

The first section of this literature review will examine the costs of occupational stress. This section reveals that stress at work is both a serious public health concern and a major impediment to organisational success (Toohey, 1993). The purpose of highlighting the human and economic costs of occupational stress is to demonstrate the significance of this issue and to highlight the importance of occupational stress as a research topic.

Section two will review the theoretical models that can be used to investigate occupational stress. Four broad models of occupational stress will be reviewed; response, stimulus, interactional and transactional models. It is argued that the fourth model, the transactional approach, contains the most salient features for undertaking research into job strain. These features - environmental demands, worker constraints and social support - form the basis of the model that will be the focus of the present study. This model is the Job Strain Model (JSM).

The third section of this review will examine research involving individual components of the JSM - job demand, job control and social support - as well as the interactive term, job demand x job control x social support. Although the support for the interactive term is lacking, a large number of studies have found that the three components of the JSM all play significant roles in the work-strain relationship. As a result of these findings, the JSM is considered to offer a sound framework for directing occupational stress research. The literature reviewed in Section Three also
reveals that there are conflicting results relating to the influence of work and non-work sources of social support. Consequently, an aim of the present study is to examine the predictive value of both sources.

Despite the strong support for the JSM, recently published research has been particularly critical of the narrow scope of generic models like the JSM (Beehr, Jex, Stacy, & Murray, 2000; Narayanana, Menon, & Spector, 1999; Sparks & Cooper, 1999). By focusing on a small number of generic variables, there is a risk that researchers and practitioners who use these generic models fail to consider stressors that are more occupational specific (Sparks & Cooper, 1999). The narrow structure of the generic model may then lead to ill-informed strategies that ignore the most significant sources of strain. Section Four will review research that has examined the influence of generic and job-specific stressors. This section reveals that calls to combine generic models of job strain with more situation-specific models has been based heavily on research involving generic role stressors. Research involving the relative influence of the JSM and job-specific stressors is limited and further research in this area is needed.

The present study will address the lack of information on the relative influence of the JSM and job-specific stressors by employing an augmented JSM (i.e., where the JSM has been augmented by job-specific stressors) to examine the strain experienced by two occupational groups; managers and professional Australian footballers. Managers represent a conventional, mainstream occupation while professional Australian football is a highly specialised, unconventional occupation. The selection of a conventional and an unconventional occupation was designed to maximise opportunities for identifying job-specific stressors and measuring the versatility of the augmented JSM.
The aim of the fifth and sixth sections of this review will be to examine what is already known about the strain experienced by managers and professional footballers. The key question that will guide this review is, to what extent will the components of the JSM and job-specific stressors account for the strain experienced by each group? The answer to this question will then be used to predict the extent that the JSM, job-specific stressors and an augmented JSM will account for the strain experienced by managers and professional footballers.

There are a number of important similarities and differences in the stressors experienced by the two occupational groups and Section Seven will identify what these are and explain why they exist. The results of this review will then be used to predict the extent that inter-occupational variations will be reflective of the work characteristics that are important for each occupation. Addressing this hypothesis will provide a more detailed understanding of the connection between important work characteristics and job stressors. In-turn, this information will help clarify the need for researchers and practitioners to identify these work characteristics early in the research process.

In the final section, the key findings from the entire literature review will be used to develop the hypotheses that will guide this study. Five hypotheses have been formulated. The central hypothesis predicts that the augmented JSM - where the JSM has been augmented by job-specific stressors - will explain significantly more of the job strain than if the JSM was used alone. It is also expected that the job-specific stressors that are predictive of job strain will be an extension of work characteristics that are important for each occupation.

This review will focus on identifying the work characteristics that contribute to the negative consequences of occupational stress and, consequently, the term ‘strain’ will
be generally used instead of the less specific term, ‘stress’. Where the term ‘stress’ is used, the author will be referring to the negative reactions to heightened arousal, not the arousal itself. Furthermore, the term ‘stressor’ will be used to describe those work characteristics that contribute to job strain.

The Impact and Prevalence of Occupational Stress

Before discussing the theoretical background to this study, it is necessary to highlight the human and the organisational costs of occupational stress. A summary of the effects of occupational stress, including the prevalence, will help establish why investigating the sources and effects of job strain is an important topic of research.

Human Impact

The human consequences of chronic occupational strain include a range of adverse psychological, physical, behavioural and social consequences.

Psychological outcomes

Psychological health outcomes are among the most commonly researched consequences of chronic occupational stress. Research has found that there is a close association between prolonged exposure to job stressors and depression, anxiety, boredom, resentment and fatigue (Elovainio & Sinervo, 1997; Travers & Cooper, 1993). The higher levels of anxiety and fatigue can also impair cognitive processes, resulting in reduced problem solving capacities, poor decision making and low levels of concentration (Cox, Leather, & Cox, 1990; Kalimo & Mejman, 1987). At the same time, the psychological manifestations of stress can result in outcomes that make the individual less tolerant of subsequent or ‘secondary’ stressors (Fletcher, 1988). If the
individual is already feeling anxious, agitated, or depressed as a result of ‘primary’ stressors, then he or she will be more susceptible to less intense stressors.

Physiological outcomes

The psychological outcomes of occupational stress are rarely discussed in isolation of physiological outcomes (Cooper & Watson, 1991). Levi (1996) reports that common physiological consequences of exposure to stressful situations include, excessive muscular tension, indigestion, cardiovascular problems, hyperventilation, headaches and sexual dysfunction. Increasingly, evidence is emerging that particular psychosocial conditions at work are implicated with heart disease. Evidence from prospective as well as cross-sectional and retrospective studies has linked psychosocial work characteristics, such as job demand and job control, to CHD morbidity and mortality (Haynes & Feinleib, 1980; Karasek, Baker, Marxer, Ahlbom, & Theorell, 1981; Kristensen, 1995). These high risk work conditions are also associated with other indicators of physical morbidity including a reduced capacity to undertake daily tasks that require physical effort and increased self-reported bodily pain and discomfort (Amick et al., 1998).

Behavioural outcomes

In addition to the physiological and psychological effects, occupational stress has been shown to lead to a range of behavioural consequences. Although behavioural reactions to occupational stress are strongly influenced by individual and situational variables, research has found that there is a positive relationship between high stress levels and self-reported cigarette, coffee, and alcohol consumption (Conway, Vickers, Ward, & Rahe, 1981). These results are consistent with other studies that found a positive correlation between tension and smoking (McRae, Costa, & Bosse, 1978) and
stress and escapist drinking (Kjaerheim, Haldorsen, Mykletun, & Aasland, 1997; Violanti, Marshall, & Howe, 1985). In addition to these maladaptive coping responses, there is also anecdotal evidence that the physical and psychological consequences of chronic job stress prevent workers from adopting more positive, problem-focused coping strategies. The Public Service Association of South Australia reports that the cumulative effects of fatigue, depression, and reduced self-confidence retards the person’s ability to take steps to reduce the source of the stress (Public Service Association of South Australia, 1992). This evidence parallels research showing that vulnerability to job strain is exacerbated by previous exposure to job stressors (Fletcher, 1988) and suggests that job strain is, in part, a self-perpetuating health issue that is strongly influenced by the individual’s state of mind and prior experiences.

Social outcomes

Occupational stress is also thought to have a significant impact on interpersonal relationships. Levi (1996) reports that the behavioural responses to stress include taking unnecessary risks, aggressions, violence and other anti-social behaviour. Furthermore, occupational stress can have a significant impact on people’s non-working lives. Typical sources of job stress, including long or irregular work hours, have been shown to disrupt people's family and personal lives and reduce their ability to fulfill child-rearing responsibilities (Di Martino, 1992). Other research has shown that stressful working conditions can influence people's attitudes and behaviour in all facets of life, not just family-life. Research undertaken by Karasek and Theorell (1990) indicates that workers do not compensate for a monotonous, passive work-life with a more active life outside work (i.e., participation in cultural, sports, entertainment, religious, home, or political activities). Instead, findings indicate that
such workers appear to carry over socialized patterns of behaviour from work to leisure. Thus job descriptions that prescribe a narrow range of tasks, to be performed with endless repetition, under the strict guidance of superiors and without meaningful psychological input, condition workers to behave the same way in family and community life. The results of this research are consistent with other findings on job socialisation and leisure and political activity (Goiten & Seashore, 1980; Kohn & Schooler, 1973).

In summary, the human costs of occupational stress indicate that the adverse health outcomes are not confined to individual workers. The behavioural and social consequences of excessive stress also effect work colleagues, families and the community at large.

Organisational Impact

The physical, psychological, behavioural and social consequences of stress suggest that employers will also be adversely effected by occupational strain. Indeed, job stress has been linked to a number of outcomes which are critical to organisational success, including absenteeism, labour turnover and job performance (Motowidlow, Packard, & Manning, 1986; Spector, Dwyer, & Jex, 1988; Yagil, 1998). International estimates indicate that the costs borne by industry as a result of this reduced performance are very high. In the US, for example, industry loses approximately 550 million working days due to absenteeism (Cooper, 1994). Furthermore, 54% of these absences are estimated to be in some way strain related (Elkin & Rosch, 1990). While there are no firm estimates of the cost of occupational strain in Australia, the data available indicates that it is disproportionately high. Stress claims in the commonwealth government sector comprise 4% of all workers compensation claims
(Toohey, 1993). Their cost, however, is 16% of all claims. Furthermore the average total liability for stress claims is $30,000 while the next most expensive claim category is $3,500 (Comcare Australia, 1993a). Stress claims are comparatively more costly because the average length of incapacity is far greater. Comcare Australia data shows that the average incapacity for stress claims is 7.7 weeks compared with the total average incapacity for all conditions of 2.4 weeks.

![Diagram of visible and hidden costs of occupational stress](image)

**Figure 1.** The visible and hidden costs of occupational stress borne by industry. Adapted from Quality of Working Life Strategy (Comcare Australia, 1993b).

Although compensation claims provide an indication of the organisational costs associated with job strain, they are recognised as being the ‘tip of the ice-berg’ (Toohey, 1993). Recent changes to government legislation (e.g., in Victoria and South
Australia) making it more difficult to claim for work-induced stress, combined with the stigma attached to recipients of stress ‘pay-outs’, suggests that the clearly visible and easy to measure cost of stress will always be just a small fraction of the total cost. As acknowledged by Comcare Australia (refer Figure 1) organisational costs of stress such as work-flow interference, staff replacement and retraining and reduced productivity are generally overlooked when calculating the size of the problem.

The organisational costs associated with occupational stress indicate that stress at work should not only be considered a health problem for employees, but as an “area of actual and potential human resource loss with implications for organisational effectiveness” (Toohey, 1993, p.57). Therefore, efforts to reduce occupational strain should be seen as benefiting both employees and employers.

Prevalence

Concerns regarding occupational strain have been heightened by studies indicating that work-related strain has reached epidemic proportions. In the U.K., for example, strain related absence accounts for 60% of all workplace absence and effects one in five employees (Cartwright & Boyes, 2000). In the U.S., a national health survey found that around 50% of the respondents reported ‘a lot’ or ‘moderate’ amounts of stress in the preceding two weeks (Silverman, Eichler, & Williams, 1987). Furthermore, an estimated 11 million workers felt that exposure to mental stress endangered their health.

The level of occupational strain in other industrialised countries closely resembles that in Australia. The Australian Workplace Industrial Relations Survey (1995) found that almost half of the employees canvassed experienced increased strain in their jobs over the previous 12 months (Moorehead, Steele, Alexander, Stephen, & Duffin,
In another Australian study, it was found that one in four employees took time off in the previous 12 months due to job strain (Australian Council of Trade Unions, 1997).

The wide-spread effects of job strain, combined with the large number of people who are reported to experience excessive stress, indicate that occupational strain is a serious health issue that can undermine the health of individual employees as well as the organisations they work for. This thesis aims to contribute to the body of knowledge surrounding this issue by identifying those work characteristics that are particularly influential in the onset of occupational strain. This enhanced understanding is critical for informing the development of more effective strain prevention strategies that target key sources of job strain. Ultimately, individual workers, their families, employers and the wider community all stand to benefit from these strategies.

Models of Stress

The previous section highlighted that both employees and employers suffer as a result of prolonged occupational strain. The first step to minimising the enormous human and economic costs associated with job strain is to identify the contributory factors (Cox & Cox, 1993). There are four overlapping models that can be used to help identify the personal and environmental variables that can contribute to strain (Cox & Mackay, 1981; Fletcher, 1988; Ross & Altmaier, 1994). This section presents an overview of these four models and identifies the major criticisms that have been leveled against them. It is argued that the fourth model, the transactional approach, contains the most salient features for undertaking research into job strain. These
features - environmental demands, worker constraints and social support - form the basis of the model that will be the focus of the present study. This model is the Job Strain Model (JSM).

Response-Based Models

The first model conceptualises stress as a response to aversive situations. This model became prominent in the early part of the 20th century. In the 1930's, for example, Cannon (1935) studied the effects of strain on animals and humans and observed that when subjects experienced conditions such as cold, lack of oxygen and low blood sugar, physiological changes such as emergency adrenaline secretions were detected. Cannon concluded that subjects experiencing these changes were ‘under stress’.

A similar conclusion was drawn by Selye (1936, p. 32) when he defined stress as “the nonspecific result of any demand upon the body, be the effect mental or somatic”. Selye (1976) argued that when faced with demanding situations, people experience a patterned response that consists of three phases. Collectively, these three phases are referred to as the General Adaptation Syndrome. The first phase of the syndrome is the alarm stage and this occurs when the individual’s defence mechanisms are activated. This phase is followed by a stage of adaptation when the body adapts to the demands it faces and the individual returns to a state of equilibrium. However, if the body’s defence systems fail to cope with the intensity of these demands or these demands are prolonged, the individual will move on to a third stage. The third phase is characterised by a loss of resistance to the demands and total exhaustion occurs.

Two major criticisms can be directed at response-based models of stress. The first criticism is that the body’s response to stressful situations does not always follow a
common pattern. Research suggests that the reactions of humans exposed to some aversive physical conditions, such as those studied by Cannon (1935), vary significantly (Mason, 1971). Furthermore, there is evidence that some people who experience events that might be regarded as stressful, not only avoid negative reactions, but are actually strengthened by the experience (Hinkle, 1974). The variations in the responses to ‘stressful’ situations suggest that there are intervening variables such as personal or situational factors that influence the stimulus-response relationship and the simple response model fails to capture these. The second criticism directed at response models is that they suggest that the response to all aversive stimuli will be the same regardless of the specific source of strain. However, studies indicate that neuroendocrine responses to demanding situations vary according to whether these situations require physical or psychological effort (Cox, Cox, Thirlaway, & Mackay, 1985; Dimsdale & Moss, 1980). Again, these studies suggest that there are intervening variables that cannot be explained by the pattern of responses specified in the simple response-based models.

**Stimulus-Based Models**

Where the response-based model defines stress as a dependent variable, stimulus-based models conceptualise stress as an independent variable. That is, stimulus models of stress focus on the negative aspects of the environment that threaten or undermine health (Cox & Griffiths, 1995; Ross & Altmaier, 1994). Researchers who have adopted the stimulus model of stress have attempted to identify objectively measurable aspects of the environment that cause strain. A prominent example of this approach is the life events-stress health research pioneered by Holmes and Rahe (1967). The authors devised a list of 43 stressful life events and ranked these events
from the most stressful to the least stressful. Each event on the list was given a
standardised score that represented an objective, externally assessed rating of the level
of strain the particular event caused. Events such as divorce or death of a close family
member were given a high rating, while relatively innocuous events such as going on
a holiday were rated lowly. The stimulus-based approach is well supported in the
literature. Correlations between life event scores and health have been established for
a number of outcomes including, schizophrenia (Brown & Birley, 1968), depression
(Brown & Harris, 1978), accidents (Stuart & Brown, 1981), athletic injury (Blackwell
& McCullagh, 1990) and somatic and psychological distress (Higgins & Endler,
1995).

Although the stimulus-based models have figured prominently in previous stress
research, a number of significant criticisms have been directed at this approach.
Attempts to rate particular events according to the predicted level of strain overlooks
the importance of the meaning of an event to the individual (Zegans, 1982) and
assumes that the event will have the same impact across a range of individuals
(Kanner, Coyne, Schaefer, & Lazarus, 1981). However, perceptions of life events are
strongly influenced by group and cultural norms (Douglas, 1992), as well as feelings
of controllability and desirability (Thoits, 1983). These mediating factors vary
considerably between individuals, thus making it difficult to apply an objective rating
to specific events. The life event scales also assume that stressful events are limited to
those that involve some degree of change. However, stress is not always associated
with change, but rather, is also influenced by chronic or recurrent conditions, such as
autocratic leadership styles and low levels of support (Lazarus, 1990). Another key
criticism that has been directed at the pre-weighted life event scales is that they only
consider stressful events; stressful non-events (e.g., boredom) are generally ignored (Lazarus, DeLongis, Folkman, & Gruen, 1985).

Collectively, the above findings suggest that the stimulus-based models cannot solely explain the health effects of stressful situations. Criticisms of the stimulus-based models indicate that personal, situational and other environmental factors also influence the onset of strain.

**Interactional Models**

The interactional models attempt to overcome the shortcomings of the response and stimulus-based models and propose that stress is a function of the interaction between the person and the environment (Cox & Griffiths, 1995). Models such as those developed by Ivancevich and Matteson (1980) and Marshall and Cooper (1979, refer Figure 2 on the following page) describe the relationship between (a) noxious environmental stimuli, (b) the mediators of stress such as cognitive, affective, behavioural and demographic factors, (c) and the outcomes of stress.

Unlike the previous models of stress, the interactional model emphasises the dynamic and bi-directional relationship between the environment and the person (Kahn & Byosiere, 1992). What might initially be an effect of stress, may at a later time be an antecedent of stress. Furthermore, the role of individual and environmental factors in the interactional model reinforces the view that the factors that contribute to strain, and the associated effects of stress, may vary significantly between individuals.

Although the interactional models provide a description of the structural features of individuals’ interactions with their environment, these models do not consider the cognitive processes that drive these interactions. These cognitive processes are the focus of the transactional models.
Symptoms of occupational ill-health

Disease

Coronary heart disease

Mental ill-health

Sources of stress at work

Intrinsic to the job:
- Poor physical working conditions
- Work overload
- Time pressures, etc.

Role in organisation:
- Role ambiguity
- Role conflict
- Responsibility for people, etc.

Career development:
- Overpromotion
- Underpromotion
- Lack of security, etc.

Relationships at work:
- Poor relations with boss, subordinates or colleagues
- Difficulty delegating responsibility, etc.

Organisational structure and climate:
- Little or no input in decision-making
-Behavioural restrictions (budgets, etc.)
- Lack of effective consultation, etc.

Individual characteristics

The individual:
- Level of anxiety
- Level of neuroticism
- Tolerance for ambiguity
- Type A behavioural pattern

Symptoms of occupational ill-health

Diastolic blood pressure
- Cholesterol level
- Heart rate
- Smoking
- Depressive mood
- Escapist drinking
- Job dissatisfaction
- Reduced aspiration, etc.

Figure 2. An interactional model of stress at work (Cooper & Marshall, 1976)
**Transactional Models**

The transactional models of stress represent an extension of the interactional models and are largely consistent with them (Cox & Griffiths, 1995). The transactional model emphasises the role of environmental and individual variables and thus accounts for individual differences. However a distinguishing characteristic of transactional models is the focus on cognitive processes, particularly appraisal and coping. These models are described as transactional because they involve the continuous monitoring of the person’s transactions with his or her environment (Ross & Altmaier, 1994).

The role of appraisal and coping resources in the stress process is a central feature of the model developed by Lazarus and colleagues (Lazarus & Folkham, 1984). This model consists of four basic elements: (a) environmental stressors, that take the form of elements which the person perceives as demands, constraints or opportunities; (b) the cognitive appraisal of the stressors as presenting situations where the person’s resources are exceeded or their well-being endangered; (c) the psycho-physiological experiences of decreased health and wellbeing, and; (d) the coping behaviours and strategies utilised to manage the demands and associated decreased health and well-being. A key aspect of this model is the process of cognitive appraisal (Folkman, Schaefer, & Lazarus, 1980). Cognitive appraisal consists of primary and secondary components and stress exists if a person appraised the events in the environment as exceeding his/her coping resources or responses.

While there may be a range of internal and external coping resources and responses available to individuals, there are two general coping options that have a particularly significant impact on cognitive appraisals. These options are: (a) the constraints under
which people have to cope and; (b) the support people receive from others in coping
(Cox, 1987). The first of these options, constraints, represent the limitations people
have in taking action to address a problem or to look at this problem in a different
way. In essence, constraints “reflect a loss or lack of discretion and control over
actions” (Cox & Griffiths, 1995, p. 789). A lack of control is reflected in working
situations where employees are faced with excessive demands, yet lack the authority
or freedom to delegate these demands or to address them in a more effective way.
This coping option is closely linked to the second option, the support received from
others. The support received from others, referred to as social support, represents a
key external coping resource that people consider when appraising and reappraising
the stressfulness of a situation. The importance of control and support in the appraisal
of potential stressors is supported by studies showing a close association between
these variables and health outcomes (Cohen & Syme, 1985; Fox et al., 1993).

Another feature of Lazarus’s transactional model of stress that has a large bearing
on health outcomes is job demand. Although the transactional definition of stress
developed by Lazarus highlights the stressful nature of excessive demands, other
definitions also refer to the strain caused by having too little demand. The person-
environment (P-E) fit model, for example, highlights that strain results from situations
in which resources exceed demands as well as times when demands exceed resources
(French, Caplan, & Harrison, 1982). This broader view acknowledges that there are
optimal levels of environmental demands that vary according to each person’s
capacities. If these optimal levels are reached, strain will be minimal. In contrast, if
the demands are too high or too low, relative to the person’s capacities, strain will
result.
The interactional and transactional models of stress have identified a wide range of antecedent and mediating variables that can influence the onset, intensity and duration of strain-related outcomes. However, in examining these models in closer detail it appears that three variables play particularly influential roles in the stress process. These variables are the two coping options - job control and social support - and job demand. A large body of research has examined the role and impact of these three variables (e.g., Cohen & Syme, 1985; Karasek, 1979; Karasek & Theorell, 1990; Payne, 1979; Thompson, 1981). The work by Karasek and colleagues (Karasek, 1979; Karasek, 1990; Karasek et al., 1981; Karasek & Theorell, 1990; Karasek, Triantis, & Chaudhry, 1982) has been particularly prominent in the literature and has led to the development of the Job Strain Model (JSM).

The Job Strain Model

One of the most commonly used transactional models underpinning large-scale occupational stress research is the job demands-job control model or the Job Strain Model (JSM) (Fox et al., 1993). This model is regarded as the most influential model in the research on the psycho-social work environment, stress and disease in recent times (Kristensen, 1995). In contrast to the other interactional and transactional models reviewed in the previous section, the JSM pin-points the specific stressors that are most likely to contribute to job strain and predicts the levels of strain that will result (Fletcher, 1991). Potentially, this predictive feature provides valuable information for developing strain prevention strategies. Identifying those work characteristics that account for significant proportions of job strain will enable
practitioners to make informed decisions on how they can best reduce the impact of strain.

Karasek and his colleagues (Karasek, 1979; Karasek et al., 1981; Karasek & Theorell, 1990) have tested the JSM on a diverse range of occupational groups (e.g. machine operators, carpenters, nurses, bank officers and managers). The results from these studies indicate that the model has broad, cross-occupational relevance. There have been many other studies that have examined the individual and the collective influence of job demand, job control and social support (e.g., de Jonge & Kompier, 1997; Fletcher & Jones, 1990; Ganster & Victor, 1988; Yang & Carayon, 1995). The overall aim of this section is to review these studies and determine the JSM’s suitability for guiding occupational stress research. More specifically, this review will identify how each component of the JSM has been operationalised in previous job strain research and assess the predictive value of these variables. This section will also establish how job strain is measured and identify which particular measures will be used in this study.

The Dimensions of the JSM

Before assessing the JSM’s suitability for guiding occupational stress research it is first necessary to describe the content of the model in more detail. Developed by Karasek (1979), the JSM uses a two-dimensional design involving job demands and job control to predict stress-related illness.

The JSM proposes that the stress-related illness will not result from an aggregated list of stressors, such as the life-event and work environment stressors mentioned in the previous section. Instead, the model predicts that a significant portion of job strain will be due to the simultaneous interaction of job demand and job control (Karasek et
al., 1981). As illustrated in Figure 3, when high job demands are combined with low control the risk of psychological strain and physical illness increases (refer Arrow A). High strain jobs therefore represent those work situations where the demands are not matched by adequate levels of decision making authority and/or skill discretion. Conversely, when high job demands are matched with high levels of control, positive outcomes including motivation and learning are more likely to occur (refer Arrow B).

Figure 3. The original Job Strain Model.

In more recent times, another variable has been added to the original JSM. After examining the effects of social support, Karasek and Theorell (1990) found that the support of co-workers and supervisors was one of the most important factors in
ameliorating stress in the working environment. This finding prompted the authors to expand Karasek's (1979) original job strain model to include the support provided by work supervisors, colleagues and subordinates (refer Figure 4 on the following page). Within the expanded model, high job strain is predicted to occur when the demands of a situation are not matched by commensurate levels of control and support (Landsbergis, Schnall, Schwartz, Warren, & Pickering, 1995). The expanded JSM will be the focus of the remainder of this review.

The transactional nature of the JSM is reflected in the distinction it makes between stress and strain. The JSM predicts that job demands produce a state of heightened arousal (i.e., high heart rate and adrenaline secretion) (Fox et al., 1993). The term ‘stress’ is used to describe this heightened level of arousal and, in itself, this state is neither good nor bad (Karasek, 1989). The stress response is an intermediate state and it is the perceived levels of job control and social support that determine whether desirable or undesirable outcomes will result. If control and support are appraised as exceeding the demands faced, then the ‘balance’ of the transaction will be learning and renewal. Conversely, if the appraised control and support do not match the demands, the stress accumulates and adverse physiological and psychological reactions are produced. These adverse or undesirable reactions are collectively referred to as ‘strain’.

The purpose of the remainder of this section is to review studies that have examined the individual and combined influence of job demand, job control and social support. The results of this review will then be used to assess the JSM’s suitability for guiding an investigation into occupational stress.
Figure 4. The expanded Job Strain Model (Karasek & Theorell, 1990)
Job Demand

Job demands reflect the pace that work is to be completed, the time available to complete the work and the amount of work to be undertaken (Fox et al., 1993). Thus, high job demands include fast paced work, excessive workloads, and tight deadlines. A number of early studies have found that high job demands can lead to elevations of blood cholesterol (Friedman, Rosenman, & Carroll, 1958; Sales, 1969). Similarly, the results of experimental research found that work overload lead to lower self-esteem, more task errors, increased heart rate and elevated cholesterol levels (French et al., 1982). More recently, quantitative workload and computer problems such breakdown were found to be predictive of strain outcomes, including boredom, dissatisfaction and daily life stress (Yang & Carayon, 1995). Overall, these studies support the view that job demands lead to psychological and physiological strain.

Job Control

Job control has been broadly defined as the belief that one has a response available that can influence the aversiveness of an event (Thompson, 1981). Operationally, control can be seen to consist of two components: the worker's authority to make decisions on the job (i.e., decision authority), and the variety of skills used by the worker (i.e., skill discretion) (Ganster & Schaubroeck, 1991).

Early research into the relationship between job control and health outcomes found that there were strong empirical links between low control and a range of adverse health outcomes, including reduced job satisfaction (Kasl, 1973), poor mental health (Quinn, Seashore, & Mangione, 1971) and escapist drinking (Margolis, Kroes, & Quinn, 1974). However, much of the early research into the relationship between
control and ill-health employed cross-sectional study designs that made it difficult to make definitive conclusions regarding causality (Cooper & Marshall, 1976; Jackson, 1983). In more recent times there have been a number of experimental and longitudinal studies that have strengthened the view that control is an important causal determinant of job strain (e.g., Bosma et al., 1997; Carayon, 1995; Jackson, 1983). For example, the prospective cohort study undertaken by Bosma and colleagues examined the relationship between adverse psychosocial work conditions and risk of CHD. Participants who recorded low levels of job control at two follow-up points (assessed three years apart) had a significantly greater risk of future coronary heart disease. This association was recorded for both objective and subjective measures of job control. Although further longitudinal research is required (Carayon, 1995), much of the literature indicates that a lack of job control can lead to higher levels of job strain.

Social Support

A key variable in the development and impact of occupational strain is social support (Caplan, Cassell, & Gore, 1977; House, 1981). In a general sense, social support refers to the quantity and quality of relationships with significant other people such as family and friends (House & Cottington, 1986). Descriptions of social support can be divided into four forms: emotional (e.g., showing empathy and trust); informational (e.g., providing advice); instrumental (e.g., completing another person’s work), and; appraisal support (e.g., providing performance feedback) (House, 1981).

As noted at the beginning of this section, Karasek's original demand-control model has been expanded to include the support provided by others (Karasek & Theorell, 1990). The inclusion of social support in the JSM has since been validated in studies...
indicating that support factors did increase predictability over and above the original model for a range of dependent variables including depression, anxiety and job satisfaction (Fletcher & Jones, 1990; Munro, Rodwell, & Harding, 1998).

Furthermore, an expanded model of job strain that includes demand, control and support has been shown to predict strain within single occupational groups as well as between different occupational groups (Payne & Fletcher, 1983).

Research examining the strain-reduction effects of support suggest that work-based support is particularly important for preventing or reducing occupational strain. The findings of several large cross-sectional studies indicate that perceived support from work supervisors and colleagues is associated with lower levels of perceived stress (House & Wells, 1978; Karasek et al., 1982; Winnubst, Marcelissen, & Kleber, 1982; Yang & Carayon, 1995). Furthermore, this and other research (Ganster & Victor, 1988; Gottlieb, 1983) has revealed a strong correlation between social support at work and self-reported physical and mental health.

The decision to expand the original job-strain model to include social support is not only supported by empirical research. The close relationship between strategies designed to increase control and social support suggests that the expanded model also has considerable practical merit. House (1981) notes that job redesign strategies, such as participatory work design processes, incorporate increases in control and social support. The close practical relationship between control and support is also acknowledged by Karasek and Theorell (1990, p.69), “changes in social relations between workers (such as initiation of autonomous work groups) and changes in decision latitude are almost inseparable strategies”.

Evidence indicates that specific forms of social support, rather than a global measure of an individual’s integration into social networks, are required to moderate
the impact of stress (e.g., Cohen & Wills, 1985; Hagihara, Tarumi, & Miller, 1998; Terry, Neilsen, & Perchard, 1993). The specific forms of support enable a disaggregated or functional approach to be taken whereby the form/s of support is appropriately matched to the specific needs activated by the stressor (Cutrona, 1990; Sarason, Sarason, & Pierce, 1990). For this matching to occur, the support should be provided by someone who has the knowledge, ability, or authority to address the needs that the particular stressor activates (Gottlieb, 1983; Terry et al., 1993). For many workplace stressors, supervisors, managers, and to a lesser extent, work colleagues, have the knowledge and the authority to eliminate or reduce their impact.

Despite the strong support for the strain-reduction benefits of work-based social support, other research has found that non-work sources of support (rather than work support) are predictive of job strain (Munro et al. 1998). There has been a tendency to focus on work-based support when examining the relationship between social support and job strain and therefore overlook the support provided by family and friends (Munro et al., 1998). In recognition of the lack of information on the role of work and non-work support, the proposed study will measure both work and non-work sources of support.

The Interactive Effects of Demand, Control and Support

Empirical support for the interactive effects of job demands, job control and social support has been mixed. In terms of the links between job demand and job control, most of the support for the interactive term has come from large, multi-occupational studies (de Jonge & Kompier, 1997; Schnall, Landsbergis, & Baker, 1994). Smaller studies involving single occupations have generally found main effects of demand and control (e.g., Hurrell & McLaney, 1989; Perrewe & Anthony, 1990; Spector, 1987).
Demand-control interactions have not been identified in these studies. Even in single occupational studies that have supported the interaction between these two variables, support has only been modest (Fox et al., 1993; Munro et al., 1998).

In comparison to studies that have examined demand-control interactions, the impact of the multiplicative term, demand x control x support is poorly represented in the research (de Jonge & Kompier, 1997). Where this term has been examined, the results supported an additive rather than an interactive model (Dollard, Winefield, Winefield, & de Jonge, 2000). In view of the lack of information on the predictive capacity of the interactive term, demand-control-support, the present study will investigate both the additive and the interactive effects of these three variables.

Measures of Job Strain

Research based on the JSM has frequently used well-being to measure job strain (e.g., Hurrell & McLaney, 1989; Munro et al., 1998; Parkes, Mendham, & von Rabenau, 1994). Three forms of well-being could be measured when investigating the work-strain relationship. These forms are ‘job-specific’ wellbeing, ‘context-free’ well-being and ‘non-job’ well-being (Warr, 1996). Of particular interest in this study are the feelings people have about themselves in relation to their job (i.e., job-specific well-being) and the feelings people have irrespective of any particular setting (i.e., context-free well-being).

A job-specific measure of well-being: job satisfaction

Job-specific well-being covers a range of work-related factors, including job satisfaction, alienation from work, job attachment, involvement in decision making at work, and job tension. Job satisfaction is the most frequently researched aspect of job-
related well-being (Warr, 1987), and to aid comparisons with other studies, the present study will measure the level of satisfaction experienced by study participants.

Studies investigating the connection between the dimensions of the JSM and job satisfaction have frequently identified a close relationship between these variables. A number of studies have found that both job demand and job control were predictive of job satisfaction (Xie, 1996), while others identified positive relationships between control and satisfaction (Hurrell & McLaney, 1989; Payne & Fletcher, 1983). Other research has revealed that people in low strain jobs reported the lowest job dissatisfaction and those in high strain jobs reported the highest levels of dissatisfaction (Landsbergis, Schall, Deitz, Friedman, & Pickering, 1992). In terms of social support, cross-sectional and longitudinal studies have consistently found significant relationships between social support and job satisfaction (Moyle, 1998; Parkes et al., 1994; Terry et al., 1993). This relationship has been established in studies involving single and multiple occupational groups.

A context-free measure of well-being: psychological health

Where job-specific well-being captures the feelings people have in relation to their job, context-free well-being refers to the feelings people have generally. These feelings include overall levels of happiness, life satisfaction, depression and anxiety. Despite being measured as separate variables, job-specific and context-free well-being have been found to be mutually reinforcing (Judge & Watanabe, 1993). That is, a person's job-specific well-being influences their context free well-being and, conversely, context free well-being effects job-specific well-being.

Studies that have tested the capacity of the JSM to predict context-free well-being have frequently identified significant relationships between the independent variables and measures of psychological health including depression and anxiety (Fletcher &
Jones, 1990; Karasek, 1979; Munro et al., 1998; Xie, 1996). To facilitate comparisons with these studies, the present investigation will measure the psychological health of study participants.

In summary, this section has shown that there is strong empirical support for the JSM. Studies examining the influence of job demand, job control and social support have found that all three variables play significant roles in the work-strain relationship. The JSM has been tested on an array of occupational groups (e.g. machine operators, carpenters, nurses, bank officers and managers) and has been shown to have good predictive value. However, research on the health effects of the interactive terms is largely unconvincing and, in the case of demand x control x support, more research is required. Nevertheless, the literature reviewed thus far suggests that the JSM provides an accurate description of the work-strain relationship and is therefore a sound theoretical framework for directing occupational stress research. This section has also shown that psychological health and job satisfaction figure prominently in research examining the JSM and, to aid comparisons with previous studies, the proposed study will examine these outcome variables.

JSM Versus Job-specific Stressors

While the JSM offers valuable insights into the work-strain relationship, the model has been criticised for focusing too heavily on a narrow range of generalised work characteristics. More specifically, a number of authors have suggested that by failing to take into account more situation-specific work characteristics the JSM, by itself, provides an inadequate explanation of the work-strain relationship (Fletcher & Jones, 1993; Sparks & Cooper, 1999). In practical terms, the generic structure of the JSM
could have far-reaching health consequences. By ignoring stressors that are more job-specific, a pre-occupation with demand, control and support may mean that more damaging work characteristics go on undetected. This section will review research that has examined the influence of generic and job-specific stressors. The research covered in this section includes studies that have directly examined the comparative influence of generic and job-specific stressors. At the same time, this section will examine studies that have investigated the types of stressors experienced by specific occupations. Although the latter studies do not directly address the issue of generic versus job-specific stressors, they do provide an insight into the likely influence of each group.

The results of this review indicate that research into the relative influence of the JSM and job-specific stressors is limited and further research in this area is needed. This lack of research provided the impetus for the present study and the final subsections will briefly describe how the present study will address this knowledge gap and highlight the implications of this research.

**Relative Influence of Generic and Job-Specific Stressors**

**Direct investigations**

There have been a number of studies that have directly examined the relative influence of generic and job-specific models. One of the earliest of these was that undertaken by Bacharach and Bamberger (1992). This study compared a generic role stressor model with two alternative occupation-specific models across two occupational groups, nurses and engineers. The study found that the more specific the role stressor model was, the greater the degree of model fit, and thus the more plausible the model. In a more recent study, researchers compared the influence of
generic role stressors - role overload and workload variability - and occupation-specific stressors experienced by door-to-door book sellers (Beehr et al., 2000). The results showed that both generic and job-specific stressors predicted psychological strain. Furthermore, this study found that the job-specific stressor index accounted for significantly more of the explained variance in strain outcomes beyond that attributed to generic role stressors. Both these studies suggest that combined models of job strain, that incorporate both generic and job-specific work characteristics, will explain more of the variance in strain than if the generic model is used alone.

The need to examine both generic and job-specific stressors is reinforced further by two studies showing that there are both similarities and differences in the stressors experienced by different occupations. In the first study, Sparks and Cooper (1999) examined the stressors experienced by over 7000 employees in 13 different occupations. The influence of job control and six sources of work pressure – factors intrinsic to the job, organisational role, relationships at work, career development, organisational climate and home-work pressures – were investigated. The results of pooled within-group correlations revealed that job control and the six sources of pressure were all significantly related to ill-health. Furthermore, correlations between the seven independent variables and physical and mental health were different for each occupation. Some work characteristics were found to be more important than others depending on the occupation.

In a similar study involving clerical officers, university professors and sales associates, there were again similarities and differences in the stressors reported by the occupational groups (Narayanan et al., 1999). Some stressors, such as interpersonal conflict, work overload and time wasters were common to all three
occupations. However the importance of other stressors, including low control and interpersonal conflict, varied from one occupation to the next.

The studies undertaken by Sparks and Cooper (1999) and Narayanan et al. (1999) indicate that while there may be some stressors that are common to a number of occupational groups, there are others that are specific to the occupation being studied. The inter-occupational differences highlighted in these studies add weight to previous research indicating that there are structural and cultural work characteristics that are dominant within individual occupations. Structural and cultural work characteristics include the occupation’s demographic composition, training and socialization patterns and the nature of resources used (Friedson, 1970). These work characteristics vary from one occupation to the next and are likely to result in different perceptions of the work environment and different reactions to these perceptions (Barley, 1990; Garden, 1987). These varying perceptions of the work environment lead to certain situations and conditions being regarded as stressful in some occupations but not others. Ultimately, it is the structural and cultural characteristics that define each occupation that give rise to job-specific stressors (Barley, 1990).

Indirect investigations

The existence of more job-specific sources of stress, in addition to generic stressors, is further supported by studies that have identified the stressful working conditions experienced by individual occupational groups. Collectively, these studies have focused on a diverse range of occupational groups, including dentists, nurses, teachers, oil-rig operators and musicians. Although these studies have not been designed to measure the relative influence of generic and job-specific stressors, the results of this research suggest that both categories of stressors need to be considered when identifying working conditions that contribute to job strain.
**Dentists.** A national survey of general dental practitioners found that some of the highest ranked stressors were strongly linked to the specific requirements of this occupation. These stressors included, a patient having a medical emergency in the surgery, difficult, uncooperative patients, and running behind schedule (Cooper, Watts, & Kelly, 1987). A similar study undertaken a decade later found that while these job-specific stressors were still a major source of stress for dentists, other stressors related to the more generic dimensions of job control and job demand had also become influential sources of strain (Wilson, Coward, Capwell, Laidler, & Shaw, 1998). In this latter study the working constraints set by the National Health Service, working under constant time pressures, long working hours and maintaining high levels of concentration for long periods with few breaks had become common stressors experienced by dentists.

**Nurses.** Studies involving nurses have also identified a mix of generic and job-specific stressors. A study of hospital nurses found that some of the most frequent stressors related to dealing with fearful and anxious clientele and poorly designed work schedules (Triolo, 1989). At the same time this study found that the generic stressors, work overload and role ambiguity, were key sources of strain. A lack of job control has also been reported as a key source of strain among nurses (Simpson, 1990) and indicates that both generic and job-specific stressors are likely to influence the strain experienced by members of this profession.

**Teachers.** Outside the medical sector, members of the teaching profession have been found to experience stressors that are very specific to their occupation, as well as more generalised stressors. Some of the job-specific stressors reported by primary and secondary school teachers include, problems with students, overcrowded classrooms, a lack of recognition for work completed and conflict between staff (Greenglass,
Burke, & Konarski, 1997). At the tertiary level, a study of two universities found that
the frequently cited sources of stress included increased administrative tasks,
fragmentation of work roles, funding cutbacks and longer working hours (De La
Hope, 1996). Although some of these stressors are closely related to the generic
stressor, job demand (i.e., increased administrative tasks and longer working hours),
the strain associated with reduced funding and division of work roles fall outside the
narrow parameters of the JSM and other generic models of job strain. Moreover, these
stressors are more specific to the work context experienced by the study participants.

**Accountants.** Accountancy is another occupation where generic and job-specific
stressors have been identified as key sources of strain. A survey of accountants in the
U.S., for example, found that the major sources of stress for participants were long
hours of work, tight deadlines and conflict between work and home (Collins &
Killough, 1989). These results are similar to those found in a study involving U.K.
based accountants (Daniels & Guppy, 1995). The results of this study revealed that
the most frequent stressors were working long hours, complying with regulations,
supplying information to the Inland Revenue, having too much work, and working to
tight deadlines. Although the stressors identified in the earlier study tended to focus
on aspects of job demand, results from the latter study involved stressors that were
more reflective of the specific working conditions experienced by U.K. accountants.

**Off-shore oil personnel.** The studies reviewed in this sub-section have so far
focused on relatively mainstream occupational groups. These studies identified a
broad mix of stressors that represent generalised work characteristics (e.g., job
demand) and more job-specific variables. However, job-specific stressors appear to
become more prominent when examining less conventional occupational groups. For
example, job-specific stressors are particularly evident among off-shore oil personnel.
Constant noise and activity, working and living in a restricted location for extended periods of time without any breaks, time pressure, and concerns about safety have been found to be common sources of stress for off-shore oil and gas personnel (Ulleberg & Rundmo, 1997). These stressors reflect the most salient features of the off-shore oil industry, in particular the reliance on heavy machinery and the isolated living and working arrangements.

Musicians. Musicians are another unconventional occupational group that, although poorly represented in the occupational stress literature, have been shown to experience a wide variety of job specific stressors (Sternbach, 1995). These stressors include numerous environmental hazards (e.g., highly repetitive movements, excessive noise and inadequate lighting), irregular working hours, constant threat of job loss, exceptionally high performance standards, more demanding audiences and conductors, and pre and post-performance anxiety. A notable feature of these stressors is their close links with the work characteristics that are important to this profession. For example, the pressure to achieve very high standards of performance reflects the need for members of this profession to perform in front of an audience. In most cases this audience has paid to attend the event and, consequently, musicians have an obligation to meet their expectations. Regardless of whether the musician is a solo artist or a member of a large orchestra, a failure to meet the expectations of an increasingly discerning and cost-conscious audience is likely to result in lost patronage and reduced income (Sternbach, 1995).

The literature reviewed in this sub-section has identified a range of generic and job specific stressors that have been experienced by the occupations involved. In each case, the studies have identified stressors that appear to be closely linked to work characteristics that are important for the occupation concerned. These links were
particularly evident when reviewing less mainstream occupations that were defined by relatively unique work characteristics. The identification of more occupation-specific stressors in the above studies supports the view that generic models of job strain should be expanded to include more occupation-specific variables.

JSM Versus Job-Specific Stressors: A Significant Gap in the Research

Overall, studies that have examined the relative influence of generic and job-specific stressors indicate that there is increasing empirical support for occupational strain research to be underpinned by combined generic and job-specific models. However research looking at the relative influence of generic and job-specific stressors is still in the early stages and there is considerable scope for conducting further research in this area. One area where there needs to be more research undertaken is the relative influence of all components of the JSM (including the interactive variables) and job-specific stressors.

Many of the indirect studies that identified a range of generic and job-specific stressors impacting on the health of several occupational groups (i.e., dentists, nurses, teachers, etc.) measured aspects of job demand, job control and, to a lesser extent, social support (e.g., Biggam, Power, MacDonald, Carcary, & Moodie, 1997; Ulleberg & Rundmo, 1997; Wilson et al., 1998). However, these studies did not measure the role played by the interactive variables, namely demand x control or demand x control x support. As already mentioned, the central hypothesis underlying the JSM is that demand, control and support combine interactively to predict health outcomes. It is therefore possible that relatively large amounts of explained strain were overlooked in these studies because the interactive variables were not measured.
Similar limitations have also been identified in the studies that were designed to assess the relative influence of generic and job-specific variables. Sparks and Cooper (1999) and Narayanan et al. (1999) examined job control and aspects of job demand, yet neither study measured social support or the interactive variables. At the same time, these two studies employed univariate and bi-variate methods to analyse the results and without assessing all independent variables simultaneously (i.e., using multiple regression analyses) it is difficult to gain an accurate understanding of the relative influence of generic and job-specific stressors. Despite employing multiple regression, a key aim of the Beehr et al. (2000) study was to examine the contribution made by generic role stressors and, hence, the influence of the JSM was largely overlooked.

The lack of information on the relative influence of the JSM and job-specific stressors is a major barrier to gaining a greater understanding of the predictive capacity of a combined generic and job-specific model. As previously noted, the JSM is one of the most widely used generic models underpinning large-scale occupational stress research and has been used to predict a variety of health outcomes (Fox et al., 1993). At the same time, the JSM has been tested on an array of occupational groups and has been shown to have strong predictive value (Karasek, 1979; Karasek et al., 1981; Karasek & Theorell, 1990). The cross-occupational relevance of the JSM is supported by a number of authors who believe that despite the sources of workplace strain varying across different occupational groups, the primary causes of stress in today’s workplaces include heavy workloads, a lack of control and poor support (Cartwright & Boyes, 2000; Cartwright & Cooper, 1996; Fletcher, 1991). This perspective does not contradict research indicating that structural and cultural work characteristics play a key role in determining job stressors (Barley, 1990; Garden,
1987). Instead, this view suggests that the most influential work characteristics in the work-strain relationship are job demand, job control and social support. These work characteristics are ubiquitous and, hence, they strongly influence the strain experienced by employees across all occupations.

Present Study: Aims and Sample Rationale

Study Aims
On the basis of the strong support for the JSM, a more detailed understanding of the relative influence of generic and job-specific stressors cannot be achieved until the predictive capacity of the JSM is compared to more situation-specific stressors. The lack of information on the relative influence of the JSM and job-specific stressors has provided the impetus for the present investigation. Primarily, this investigation will be guided by three key aims. These are to:
(a) assess the ability of the JSM and job-specific stressors to predict job strain;
(b) examine the extent that the generic and job-specific stressors vary between occupational groups, and;
(c) identify the links between job stressors and structural and cultural characteristics that define an occupation.

The specific hypotheses to be tested in the present study will be developed after identifying the occupational groups that will be investigated and reviewing what is already known about the stressors experienced by these groups.

Sample rationale
Two occupational groups have been selected to assess the relative influence of generic and job-specific stressors. These groups are managers and professional Australian footballers. Managers and professional footballers were selected because they
represented two very different occupational groups. These differences, to be described in detail below, were designed to test the versatility of the JSM when it had been augmented by job-specific stressors and to maximise opportunities for exposing the links between sources of stress and dominant work characteristics.

One of the most noticeable differences between managers and professional footballers is the degree of conventionality associated with each occupational group. While management is a mainstream, conventional occupation, professional Australian footballers represent a highly specialised and largely unconventional occupation. The conventional nature of managerial positions is best evidenced by the relatively large proportion of Australian workers who are employed in this profession. Of the nine million employed persons in Australia in August 2000, 635,900 (or seven per cent) were categorised as Managers and Administrators (Australian Bureau of Statistics, 2000). Furthermore, management is a relatively ubiquitous occupational group that can be found in virtually all organisations, irrespective of industry type or organisational size (Industry Task Force on Leadership and Management Skills, 1995). In contrast, there were little over 700 professional Australian footballers in 1999 and all of these were employed in one sub-industry; Entertainment and Recreation (AFLPA, 1999; U.S. Department of Labor, 1977).

Another measure of an occupation's conventionality is its typical life-span. Most occupational groups are classified as early entry-late leaving (e.g., carpenter or farmer), or late entry-late leaving occupations (e.g., medical specialist or manager) (Herr & Cramer, 1996). However professional athletes, like models, dancers and other members of the performing arts, follow a relatively unusual career pathway whereby they enter the occupation at a young age and leave at a relatively young age (i.e., early start-early leaving occupation). Highly physical sports, like Australian football,
require athletic capacities that reach their peak when most people are in their twenties and early thirties. These capacities quickly diminish with age and, as a result, the career of a professional athlete is relatively short-lived (Ogilvie & Howe, 1982).

The training and general preparation required to become a professional athlete is another unconventional feature of this profession. Most occupational groups, including managers, require some institutional education and/or specialised on-the-job training to enter the profession (Wash, 1995). However professional athletes belong to a small group of occupations (including musicians, dancers and other performers) who, in addition to long-term on-the-job training, require high levels of natural talent that has been nurtured from a young age (Wash, 1995). Although on-the-job training is not unique to this occupation, the heavy emphasis on natural talent is a structural characteristic rarely seen in other occupational groups.

Despite the considerable differences in the career structure and entry requirements experienced by managers and professional footballers, the greatest disparity between these two groups is seen in the nature of the tasks typically undertaken. The day-to-day roles of a manager include a broad mix of generalised tasks, such as planning, organising, monitoring and controlling, as well as more industry and organisational-specific duties (Carroll & Gillen, 1987). By comparison, the job description of a professional Australian footballer is very narrow and revolves around preparing for and playing football (Shanahan, 1998). The success of a professional footballer rests on his ability to perform in front of a paying audience. The tasks typically undertaken by a professional footballer (e.g., physical conditioning and skill development) are designed specifically to enhance this ability and, consequently, they are as prescriptive as they are narrow.
It is expected that the large differences in the work undertaken by managers and professional Australian footballers, as well as the varying levels of conventionality that is associated each occupation, would maximise the opportunities for assessing the versatility of the augmented JSM. If the augmented model proves to have strong predictive value within a mainstream occupation, like managers, and a highly unconventional occupational group, such as professional footballers, then it is likely that the augmented model will also be relevant to those occupations that are situated somewhere in between these two extremes.

Testing the model across conventional and unconventional occupations will also provide valuable insights into the overall utility of the JSM (i.e., less augmentation). The JSM has rarely been tested on an unconventional occupational group, such as professional athletes. The original studies undertaken by Karasek and colleagues (e.g., Karasek, 1979; Karasek et al., 1981; Karasek & Theorell, 1990) focused on conventional occupational groups, where the sample sizes were relatively large, and excluded or consolidated very small occupations that were considered too rare to utilise. As a consequence minority occupations, such as professional athletes, were not examined in these studies. Other research that has tested the original or the expanded JSM has also tended to involve conventional occupational groups. For example, a number of studies have used the JSM to examine the strain experienced by nursing staff (Amick et al., 1998; Fox et al., 1993; Landsbergis, 1988; Munro et al., 1998), while others have involved social workers, psychologists and other large professional groups working in the human service sector (Dollard et al., 2000; Landsbergis, 1988). Studies involving white and blue-collar employees, have also tended to focus on broad occupational categories (Bosma et al., 1997; Dwyer & Ganster, 1991; Wall, Jackson, Mullarkey, & Parker, 1996). In view of the heavy
emphasis on relatively large, conventional occupations, a study that incorporated a less conventional occupation would provide valuable information on the overall adaptability of the JSM. Although the model has been shown to have strong cross-occupational relevance, the unconventional features associated with professional sport (e.g., unique career pattern and entry requirements) may lead to stressors that equal or surpass the strain associated with job demand, job control and social support.

The very distinct differences in the nature and structure of each occupational group are also designed to help identify the extent that job-specific stressors are linked to the structural and cultural features that characterise each occupation. Previous research that has examined individual occupational groups (e.g., Cooper et al., 1987; Greenglass et al., 1997; Sternbach, 1995) tends to indicate that the links between job-specific stressors and important work characteristics would be more prominent when comparing two very different occupations. For example, some of the job specific stressors experienced by dentists included having a medical emergency in surgery, uncooperative patients and running behind schedule (Cooper et al., 1987). In contrast, the typical job-specific stressors experienced by musicians included highly repetitive movements, exceptionally high performance standards and more discerning audiences (Sternbach, 1995). In both cases, the stressors experienced by each occupation could be seen to be an extension of the unique requirements of the respective profession. However if two similar occupations were chosen, for example dentists and general medical practitioners, the job stressors experienced by each occupation may be very similar and therefore the links between job stressors and important work characteristics may be more difficult to identify. This view is supported by research that has shown that even among quite distinct occupations, including law enforcement, teaching, nursing and management, the dominant sources of stress were
very similar (Biggam et al., 1997). The selection of two occupational groups that are at opposite ends of the conventionality continuum is therefore designed to help isolate and examine the links between important work characteristics and job stressors.

Significance of Present Study

The outcomes of research examining the relative influence of the JSM and job-specific stressors among managers and professional Australian footballers have important practical implications. If the generic and the job-specific models both account for significant proportions of job strain, then this finding would enhance the view that the JSM is too narrow to provide an adequate understanding of the work-strain relationship (Sparks & Cooper, 1999). Furthermore, such a finding would strengthen the argument that models consisting of a larger range of variables will explain more of the variance in strain outcomes and hence give a more detailed insight into the sources of job strain (Fletcher & Jones, 1993).

Conversely, if this study finds that these job-specific characteristics only account for small variations in the strain experienced by the two occupational groups, and the JSM is shown to have strong predictive value, then this would suggest that the augmented JSM is neither accurate nor cost-effective. Practitioners who seek to identify the more situation-specific stressors need to have a high level of certainty that these work characteristics can explain significant proportions of the strain experienced by workers. The identification of stressors that are specific to the occupation/s being investigated can be labour intensive, time consuming and, potentially, very costly (Jex, Adams, Elacqua, & Lux, 1997; Narayanan et al., 1999). If there is only weak support for the augmented JSM, and the generic component is well supported, then this would indicate that the variables described in the JSM already provide accurate
explanations of the strain experienced. Furthermore, the weak predictive value provided by the job-specific variables would indicate that they are not worth the considerable costs associated with identifying them.

In addition to assessing the value of augmenting the JSM with job-specific stressors, this thesis will also examine the ability of the JSM (i.e., less job-specific stressors) to account for the strain experienced by an unconventional occupational group. Previous studies that have investigated job strain using the JSM, or parts thereof, have tended to overlook minority occupational groups such as professional athletes (e.g., Fox et al., 1993; Karasek & Theorell, 1990). This profession is characterised by an unconventional career structure and job description and these characteristics may lead to situations and conditions that are just as stressful as those described by the JSM. The inclusion of an unconventional occupational group in this study will therefore provide more information on the overall utility of the JSM. A strong performance across the two occupational groups would suggest that the JSM is just as relevant to unconventional, minority occupations as it is to conventional occupations. Conversely, results that indicate the JSM explains only a small proportion of the explained strain experienced by professional footballers, would indicate that the model is more applicable to conventional groups and lacks the specificity needed to account for less conventional job structures.

Identifying links between important work characteristics and job stressors also has considerable practical implications. If the differences and similarities in the job stressors experienced by each occupational group are found to be closely associated with important job characteristics then this would reinforce the need to identify these characteristics early in the investigative process. Identifying and understanding the structural and social characteristics that lead to job stressors can provide valuable
insights into why certain work conditions are considered stressful (Jex et al., 1997). In-turn, understanding the meaning behind job stressors is critical for developing stress management interventions that can reduce the sources and severity of occupational stress (Griffiths, 1999; Ivancevich, Matteson, Freedman, & Phillips, 1990).

Before generating hypotheses regarding the relative influence of generic and job-specific stressors experienced by managers and professional Australian footballers, it is first necessary to review previous job strain studies that have involved these two occupational groups. Together with an assessment of the social and economic contexts in which each occupational group works, this review will help predict the cross-occupational versatility of an augmented JSM. Reviewing previous research involving these two occupations will also inform a hypothesis regarding the association between job-specific stressors and work characteristics that are important to an occupation. The review of the background context, that includes an examination of the structural characteristics mentioned in the previous sub-section, is expected to provide valuable insights into why certain work conditions are considered stressful. As previously alluded to, simply knowing that a certain situation or condition is a key contributor to job strain is not sufficient to develop well-informed stress reduction strategies. Understanding how and why these work characteristics lead to job stress is just as critical to developing interventions that effectively address the source/s of the problem.
Job Strain and Managers

The literature reviewed in the previous sections has shown that there is a lack of information on the relative influence of generic and job-specific stressors. An area that is particularly under-represented in the literature is the comparative influence of the JSM and the more situation-specific work characteristics. Although there is considerable evidence to suggest that the job-specific model would explain significantly more of the variance in job strain than if the JSM was used alone, there is insufficient data to make a firm conclusion regarding the efficacy of combined generic and job-specific models. The proposed study will therefore address this gap in the literature by assessing the capacity of a combined JSM and job-specific model – referred to as the augmented JSM – to predict the strain experienced by managers and professional Australian footballers. The selection of a conventional and an unconventional occupational group has been designed to test the utility of the augmented JSM. It is anticipated that if the augmented JSM is proven to be to have strong predictive value for two vastly different occupations, then it is highly likely that the model will apply to occupations located somewhere in between these extremes.

The following section will review studies that have examined the work stressors experienced by managers. This review will then be used to develop a hypothesis regarding the capacity of the generic components of the JSM and the job specific stressors to predict the strain experienced by this occupational group. This part of the review will not only take into account studies that have identified key sources of managerial strain, but will also examine literature describing the social and economic contexts in which this occupation works. An assessment of the background context
will help identify the conditions and work characteristics that are typically experienced by members of this occupation. As highlighted in the previous section, the stressors experienced by any occupational group are likely to be an extension of the work characteristics that are important to that occupation. An assessment of the background context will therefore help to explain why certain work characteristics, conditions and situations are considered stressful.

The Context of Managerial Work

The economic imperatives of the 1980’s and the 1990’s have created highly competitive working environments that have forced organisations to become increasingly more cost-efficient. In the private sector, the high levels of competition have been driven, largely, by: (a) deregulation, which has blurred market boundaries and produced new competitors; (b) the emergence of a global economy whereby companies now compete on an international basis, and (c) pressure for short-term results, especially from institutional investors (Frohman & Johnson, 1993). In the public sector, a desire to improve the effectiveness and efficiency of public enterprises has been driven by a need for: smaller government; improving the responsiveness of government agencies to their clients, and; reducing government expenditure (Dunford & Bramble, 1998). In an effort to make themselves more cost efficient, many organisations have undergone enormous organisational change over the past two decades. The changes that have had a significant impact on managers include downsizing and delayering, increased decentralisation and greater job complexity, reduced resources and longer working hours, and rapid advancements in technology. However, not all major changes effecting managers have been driven by the need for increased efficiency and competitiveness. Broader social trends, such as the rapid rise
in dual-income families and increased workforce participation rates of women, also need to be considered when examining the context of managerial work.

**Downsizing and delayering**

A conspicuous feature of workplaces in the 1990’s has been the number of organisations who have reduced their workforce through downsizing and delayering. A recent survey of 1321 private and public sector organisations in Australia and New Zealand revealed that 57% of Australian organisations downsized between 1993 and 1995 (Littler, Dunford, Bramble, & Hede, 1997). Furthermore, of those who had downsized 71% had downsized twice or more. However, it is the focus of this downsizing that is most relevant to the proposed study. In the 1960's and 1970's, blue-collar workers were the targets of efforts to achieve higher levels of efficiency and competitiveness through the systematic elimination of positions and jobs. In recent times white-collar workers and middle managers have been targeted (Littler et al., 1997). As a measure of this changing focus, 44 per cent of Australian organisations had eliminated a layer of management or administration between 1993 and 1995. Researchers ominously predict that while the rate of downsizing and delayering is on the decline, the Australian economy is still in the midst of a downsizing cycle and the job-cuts will continue well into the foreseeable future (Littler et al., 1997).

The elimination of many managerial positions in recent times has had a marked psychological impact on those managers who lost their jobs, as well as those who were left behind. Managers who have lost their jobs have reported increases in depression, anxiety, poorer emotional health and impaired social functioning (Burke, 1988). At the same time, managers who survived downsizing, but saw that it was increasingly harder to get and maintain management positions, became increasingly
insecure about their own jobs (Depolo & Sarchielli, 1987; Parker, Chmiel & Wall, 1997; Vahtera, Kivimaki & Pentti, 1998).

Increased decentralisation and job complexity

The delayering that has occurred in recent years has meant that many organisations have become increasingly decentralised. Middle and lower-level managers, in particular, have been expected to delegate tasks and decision-making responsibilities to subordinates (Denham, Ackers, & Travers, 1997; McConville & Holden, 1999). Hence, the manager has been required to move away from the previous role as a prescriber and technical expert. The typical manager is now expected to take on the role of a coach and create a culture that empowers individuals and teams to generate results (Denham et al., 1997). At the same time, the streamlining of organisations has resulted in many managers taking on a range of other administrative and people management tasks that were previously the responsibility of more specialised personnel. Consequently, managers increasingly see their jobs as becoming more complex and more fragmented. In a recent survey of managers it was found that 85 per cent reported that the volume of information they have to deal with has greatly increased (Worrall & Cooper, 1999). Furthermore, 71 per cent considered that they now need a broader range of skills than they used to, and one-third have seen the number of people they manage increase.

Reduced resources and longer working hours

Not only are managers expected to complete a larger number of tasks but, with the emergence of significant budget cut-backs (Burke & Leiter, 2000), are expected to complete these tasks without a commensurate increase in time or resources (Cooper, 1998; Goddard, 1996). Essentially the efficiency drives of the 1980’s and the 1990’s
have resulted in managers having to do more with less. Budget cut-backs and reduced resources can lead to a range of other stressors, including job insecurity, lack of participation in decision making, role confusion, office politics and interpersonal conflict (Jick, 1983). However, one of the most significant consequences of the ‘leaner and meaner’ mindset is that managers are now working increasingly longer hours. Research involving managerial personnel has found that 82% regularly worked substantially more than their contract hours, 38% reported working over 50 hours per week and 41% always or often worked at weekends (Worrall & Cooper, 1999).

Technological advancements

The longer working hours of managers are not just the result of downsizing and budget cut-backs. The rapid expansion of information technology has also created an increase in the amount and pace of work, with colleagues, customers and suppliers all demanding more information and at a faster rate (Cooper, 1998). Yet the introduction of information technology is only one component of the general technological revolution that has transformed many organisations in recent years. A recent survey of Australian companies found that 18% had introduced major plant and equipment in the previous two years, while 14% had introduced major office technology over the same period (Savery & Luks, 2000). Major advancements in equipment, operating techniques and organisational systems have not only created heavier workloads for managers (Worrall & Cooper, 1999), but in some cases, have quickly made old skills and knowledge obsolete. For those who have difficulty keeping pace with these changes, new technology represents a major source of pressure (Cooper, 1984) and job insecurity (Burke & Leiter, 2000).
The rapid rise in dual income families

The organisational changes mentioned thus far have been motivated largely by a need for organisations to become more cost-efficient and more competitive. However one of the most significant changes that has occurred in Australian workplaces over the past 30 years has been influenced by broader social and cultural forces. This change has been the dramatic increase in the number of women in the paid workforce. In 1980, 46% of married women with dependent children were in the paid workforce. By 1995 this figure had increased to 63% (Wright & Sheridan, 1998). The rapid rise in dual income families has meant that many workers, especially those with young children, are now faced with the constant need to balance work and family responsibilities. The difficulty associated with meeting family and other relationship commitments is compounded by the significant increases in working hours, the relative rigidity of working arrangements and, overall, the high levels of commitment that organisations now expect of their members (Pierce & Delahaye, 1996). Conflict between work and family, and work and life, is an issue that has the potential to undermine the health of all employees, not just managers. However, in light of the high levels of commitment and responsibility that is integral to most management positions (Luthans, Hodgetts, & Rosenkrantz, 1988; Mintzberg, 1980), it would appear that managers are most vulnerable to experiencing this hazard on a long-term basis.

The pace and extent of change that has occurred in the workplace over the past decade is, with the exception of the industrial revolution, unprecedented (Cooper, 1998). In addition to the major organisational changes that have been mentioned in this section, there have been significant changes in workforce expectations, increased emphasis on quality, new legislation relating to employee relations and workplace
safety issues, the introduction of a new taxation system and, generally, the evolution of more turbulent and less predictable business environments (Industry Task Force on Leadership and Management Skills, 1995). Collectively, these changes have placed organisations, and managers in particular, under enormous pressure.

Managers, Strain and Organisational Performance

The prevalence of strain among managers suggests that the breadth and depth of change that has occurred over the past decade has taken its toll on managers. Studies involving managers show that work-related strain among managers is reaching epidemic proportions. In a recent survey of managerial personnel, most respondents reported feeling more pressure than they could ever remember (Cohen, 1997) In another study, 88% of the managers surveyed reported elevated levels of strain (Tillson, 1997). The high rate of strain among managers is a serious concern, particularly in light of the important responsibilities typically held by managers. The role of a manager in planning, organising, controlling, managing conflict and leading indicates that any threats to the capacity of managers to fulfil this role also represent a serious threat to the effectiveness of the organisation (Carroll & Gillen, 1987; Menon & Akhilesh, 1994).

The prevalence of managerial strain suggests that the benefits of a study examining the sources of strain experienced by managers are not limited to providing a greater insight into the relative influence of generic and job-specific stressors. In contrast, the high rate of strain among managers indicates that this is an important area of research in its own right. A study examining the sources and effects of strain experienced by managers can add to the body of knowledge regarding the strain experienced by this occupational group. In the longer term, a sound understanding of the factors that can
contribute to job strain among managers can lead to more effective strain reduction strategies. There are a number stakeholders who stand to benefit from effective stress prevention initiatives, including managers themselves, their subordinates and colleagues, the organisations they work for, and their family and friends.

**JSM and Managers**

Research examining the generic components of the JSM suggests that when comparing the stressors experienced by two different occupational groups, these components would prove to be significant predictors of strain in both groups (Karasek, 1979; Karasek & Theorell, 1990). Consistent with this prediction, studies involving managers indicate that job demand, job control and social support are all closely associated with managerial strain.

Research has generally shown that there is a strong link between aspects of job control and well-being among managers (Bogg & Cooper, 1995; Cooper & Hensman, 1985). However, it appears that a lack of control has only recently become a major concern for managers. The results of eight European surveys during the period 1977 to 1996 indicates that there has been a gradual increase in time pressures experienced by managers that have not been matched by a corresponding increase in job autonomy (European Foundation for the Improvement of Living and Working Conditions, 1999). This finding is consistent with the results of other survey data indicating that middle and junior managers reported notable reductions in job autonomy in recent years (Worrall & Cooper, 1999). While chairmen and CEO’s remained satisfied with the level of autonomy they had, the vast majority of middle and lower-level managers were not satisfied with their level of job autonomy.
The declining level of autonomy held by managers reflects the trend for organisations to become increasingly more decentralised and to empower ‘shop-floor’ employees with greater decision making responsibilities (Denham et al., 1997; Staehle & Schirmer, 1992). However while middle and lower-level managers in particular are required to delegate their decision-making power to subordinates, they are still expected to be accountable for the performance of the work unit (McConville & Holden, 1999). Furthermore, managers are also obliged to implement policies and systems that have been developed largely by CEO’s, directors, executives and other senior staff. The lack of input into key decisions relating to such matters as staffing levels, systems of reward and training broadens the gap between responsibility and authority and creates even more strain among middle and junior managers (McConville & Holden, 1999).

Research involving managers has also identified a positive relationship between job strain and variables associated with job demand (Broadbridge, 1999; Leong, Furnham, & Cooper, 1996; Worrall & Cooper, 1995). In light of the cost-cutting measures that have occurred over the past two decades, where managers have increasingly been expected to do more with less, the relationship between demand and strain is not unexpected.

Like much of the research examining other components of the JSM, studies that have addressed the relationship between social support and job strain among managers indicates that social support has a strong influence on the strain experienced by this group. A lack of support from supervisors has been found to be predictive of mental health among public sector middle managers (Leong et al., 1996) while the feeling of being undervalued by senior management was a common source of strain identified by a group of retail managers (Broadbridge, 1999). Other research has
found that subordinates were seen as a key source of informational (e.g., advice on technical matters) and instrumental (e.g., undertaking tasks normally completed by the manager) support for executives that enabled them to reduce the strain associated with excessive workloads (Quick, Nelson, & Quick, 1990).

The unique role and position of managers, particularly middle and lower-level managers, makes them especially vulnerable to a lack of social support. The position of managers in an organisation places them at the interface between the most senior members of the organisation and ‘shop-floor’ employees (Albrecht, 1979; Denham et al., 1997). In this position, managers face the difficult task of mediating a firm’s policy decisions downward through the hierarchy and making sure that those decisions are instituted on time and in the manner they were intended. However, as the public face of management, middle and lower-level managers are often the recipients of criticism and aggravation from employees who do not support the changes. Many managers are therefore responsible for managing the sharpest point of conflict in employment relations (Denham et al., 1997). Not only is this conflict stressful in itself, but it can also lead to strained relationships that, in-turn, reduces the level of work-based support they receive. Constantly being in the position of “piggy in the middle” (Denham et al., 1997, p. 3), combined with a lack of support, can make lower and middle-level management one of the most frustrating areas of organisational life (Albrecht, 1979).

The literature reviewed in this section supports the prediction that job control, job demand and social support would collectively explain a significant portion of the variance in job strain experienced by managers. Furthermore, the consistency of the findings also suggests that each of the components of the JSM would be individually predictive of managerial strain.
Job-Specific Stressors and Managers

Although the JSM is expected to predict a significant proportion of the variance in job strain experienced by managers, there are strong indicators that job-specific stressors will also be closely linked to the outcome variables. This view is supported by a large number of studies involving managers that have identified stressors that fall outside the parameters of the JSM.

Studies investigating the sources of strain experienced by managers have identified a diverse range of stressors that have an impact on the health of this occupational group. For example, Cooper and Marshall (1978) undertook a review of the literature and found that a large number of job stressors impacted on the well-being of managers. These stressors were categorised into six areas and included: factors intrinsic to the management position (e.g., long working hours); factors associated with the multiple roles of a manager (e.g., role conflict and role ambiguity); relationship stressors (e.g., interpersonal conflict); career development issues (e.g., fear of job loss); organisational culture (e.g., lack of opportunities to participate in decision making), and; the interface between work and home (e.g., conflict between work and family commitments). It is important to note that some of these stressors are consistent with the JSM (e.g., a lack of opportunities to participate in decision making) while others cannot be explained by this model (e.g., fear of job loss).

In relation to those stressors that are not captured by the JSM, a large number of these have been identified in more recent studies. For example, career development problems such as the threat of job loss (McCormick & Cooper, 1988), lack of job security (Cavanaugh, Boswell, Roehling, & Boudreau, 2000) and career blockages (Bogg & Cooper, 1995; Cavanaugh et al., 2000) have been identified in recently published research. Other stressors that have been identified in previous stress
research involving managers include interpersonal conflict (Bogg & Cooper, 1995; Leong et al., 1996; McCormick & Cooper, 1988; Rout, 1999), poor communication (Rout, 1999); responsibility for people (Broadbridge, 1999; Menon & Akhilesh, 1994), work-family conflict (Bogg & Cooper, 1995; Broadbridge, 1999) and role ambiguity (Cavanaugh et al., 2000; Menon & Akhilesh, 1994).

The relevance of a number of the above stressors is enhanced when considered in conjunction with the social, organisational and economic changes that have occurred in recent years. The threat of job loss and the lack of job security, for example, have become particularly prevalent sources of strain over the past decade when managers have been the targets of downsizing and delayering (Littler et al., 1997; Worrall & Cooper, 1999). Similarly, longer working hours and work-family conflict reflect the organisational and social context in which many managers now work. The dramatic rise in the complexity in managerial positions, without corresponding increases in resources, have resulted in many managers spending more and more time at work (Cartwright & Boyes, 2000). The ever-increasing working week can have significant implications for the health of managers (Sparks & Cooper, 1997), while also undermining their relationships with partners and children (Worrall & Cooper, 1999).

A key feature of the studies that have been used to identify job-specific stressors is that many were the same studies that identified individual dimensions of the JSM as being significant sources of strain. In addition to the relevance of a number of job-specific stressors to broader contextual factors, this finding provides strong support for the proposition that job-specific stressors will explain a significant portion of the strain experienced by managers.
Job Strain and Professional Australian Footballers

The rationale behind calls to combine job-specific stressors with generic models is based on the belief that the narrow scope of models like the JSM fails to adequately explain work characteristics that are specific to the occupational groups being studied. These work characteristics vary between occupational groups, and as a result, it is predicted that the job-specific stressors also vary from one occupation to the next. To fully test this prediction a second occupational group, that was vastly different from managers, was selected to be involved in this study. This second occupational group was professional Australian footballers. The large disparity between managers and professional footballers was designed to maximise opportunities for identifying job-specific stressors and measuring the extent that these vary between occupational groups. The large differences between managers and professional Australian footballers was also designed to assess the cross-occupational versatility of the JSM when it has been augmented by job-specific stressors.

While a number of ex-players, current players and coaches have expressed concern regarding strain among professional Australian footballers (Wilson, 1999), little is known about the sources of this strain, the impact these have on player wellbeing, and the strategies for preventing and/or reducing the ill-effects. Not surprisingly, there are no published studies that have assessed the capacity of the JSM to predict the strain experienced by professional Australian footballers. In the absence of empirical data relating specifically to this population, much of the following section will examine studies involving other sports. Studies examining the stressors experienced by athletes from different sports suggest that regardless of the nature of the sport, there will be some stressors that are common to all athletic populations. For example, competition-
based stressors (e.g., fear of failure and high expectations of others) have been identified in studies involving a range of different sports including figure skating, golf and basketball (Cohn, 1990; Gould, Jackson, & Finch, 1993; Madden et al., 1995). On the basis of these findings it is expected that the broader stress in sport literature will provide key insights into the types of job-specific stressors that are likely to be experienced by professional Australian footballers. The findings from this research will then be used to develop a hypothesis regarding the ability of the JSM and job-specific factors to predict the strain experienced by professional Australian footballers.

Before undertaking a review of previous stress in sport research, it is important to describe the salient features of the work context of professional Australian footballers and other professional athletes. Examining this context will help assess the relevance of studies involving other sports and other levels of competition. The background information will also be used to identify the links between the stressors experienced by professional footballers and the work characteristics that are considered important in this profession.

The Work Context of Professional Australian Footballers

The majority of professional Australian footballers are registered to play in the Australian Football League (AFL). For the purposes of this study, professional Australian footballers are defined as those players who receive the majority of their income through playing Australian football.

The AFL is the most elite Australian football league involving 736 registered players spread across sixteen clubs and located in five Australian states (AFLPA, 1999). Each club consists of a list of 40 players (plus six ‘supplementary’ players)
who compete in senior and reserve-grade competitions. Each club also has a coaching panel, generally consisting of one head coach and 3-4 assistant coaches, and support staff such as trainers, doctors, physiotherapists, psychologists and player welfare officers (AFL, 2001). The employment conditions that players work under have been defined by an enterprise agreement that has been negotiated between the AFL and the players' representative, the AFL Players Association (AFL/AFLPA, 1999). Under this agreement, players are entitled to a minimum wage, superannuation, medical insurance, reimbursement of relocation expenses, nine weeks annual leave, access to personal counseling, career guidance and other player development services. Players, including young players without any AFL experience as well as existing players who have been traded or de-listed (i.e., contract terminated), are recruited to each club via a national drafting system (AFLPA, 1999).

As already mentioned, professional footballers - along with other professional athletes, musicians, dancers and other members of the arts and entertainment industry – are one of the few occupations that perform to a paying audience. Consequently the day-to-day tasks typically undertaken by professional Australian footballers are aimed at executing this performance with a high degree of precision and effectiveness. Fitness and conditioning sessions, skill development programs, tactical exercises, team meetings, feedback sessions, and recovery and rehabilitation programs are all aimed at ensuring that the individual and the team achieve and maintain high levels of performance (Shanahan, 1998). Although some players may do extra sessions, the majority of players will spend up to 30 hours per week preparing for and playing football (Shanahan, 1998).

In addition to the range of football-specific activities undertaken by players themselves, there is a broad spectrum of facilities and services available to players to
enable them to achieve elite levels of performance. These resources include a diverse range of training facilities, video and statistically-based performance feedback systems, medical and rehabilitation services, state-of-the-art conditioning equipment, and specialised coaching and support staff (AFL, 2001; McKenzie, 1999).

Public scrutiny

All members of the arts and entertainment industry are subjected to high levels of public scrutiny. However within Australia, professional Australian footballers are likely to receive more attention than most. Australian football has long held the distinction of being the most popular spectator sport in Australia. In 1997, 6,757,797 people attended AFL matches, more than double the nearest rival (AFL, 1997). Television coverage of AFL football is also very popular. Coverage of the 1997 AFL Grand Final was the most watched sports program in Australia during the previous year and the game was the most watched TV program of any description in Adelaide and Melbourne. The popularity of AFL football and the high profile of players mean that players are under constant scrutiny. Not only is the on-field performance of players closely monitored within clubs, but players are also heavily critiqued by radio commentators, TV broadcasters, sports journalists and the wider public.

The monitoring of players’ performances is not restricted to the number of marks, kicks, tackles and other statistics collected during the course of a game. The private lives of elite footballers are also regarded as public property. Regardless of whether the player is one of the best players in the league or is struggling to cement a place in the senior team, a misdemeanor of any sort will create considerable media attention. In the past, players have made newspaper headlines for a variety of reasons including traffic infringements, claims of sexual harassment, fighting in public venues, and being involved in domestic disputes (Tippet, 2000). In the majority of cases, these
actions would not attract the same media attention if the people involved were not AFL footballers. Aside from high profile entertainers, business leaders and politicians, there are very few occupations where workers are consistently subjected to the same level of public scrutiny. It is therefore reasonable to conclude that intense public scrutiny would be a key source of strain for professional Australian footballers. Furthermore, this work characteristic would not be explained by the generic components of the JSM.

The hierarchical world of sport and the short career-span of professional Australian footballers

Another dominant feature of AFL football, and professional sport in general, is the competitive, hierarchical structure that it is based on and the short career-span of professional athletes. In the hierarchical world of sport, the probability of success rapidly diminishes as the individual progresses from under-age sport, to state representative teams, and finally to professional level competitions (Messner, 1992). Even if footballers are talented and lucky enough to reach the professional level the chances of staying there for any more than five years are extremely small. It was mentioned previously that professional sport is classified as an early start – early leaving occupation. This classification is supported by research showing that the typical career length of a professional football, basketball or baseball player in the U.S. is only 4-5 years (Ogilvie & Howe, 1982). The unusually short career structure is also consistent with records showing that the average career span of an AFL footballer is 41 games (i.e., approximately two years) (Andrew Demetriou, AFLPA; personal communication, May 6, 1999).

The hierarchical structure of sport, in particular the short life-span of professional athletes, puts enormous pressure on players to maintain consistently high standards of
performance. This constant pressure reminds athletes that no matter how well they performed last season or even last month, their position in the team and, in the longer-term, their position at the club will be determined by their most recent performances. Research involving elite athletes shows that the emphasis placed on the athlete's recent performances can lead to athletes becoming consumed by their sporting careers and can result in high levels of insecurity (Messner, 1992). This research also found that poor performances often led to feelings of failure, lowered self-image and problems with interpersonal relationships. While a generic measure of job demand may capture some of the performance-pressure experienced by footballers, this measure will not account for the emotional effects of poor on-field performances or the insecurity caused by a short, intense career structure.

**Post-football uncertainty and the all-consuming nature of professional football**

Another feature of professional Australian football that will not be taken into account by a generic measure of job demand is post-football uncertainty. This uncertainty is strongly linked to the recent professionalisation of AFL football and the all-consuming nature of the sport. While players have been paid to play Australian football almost from the time the game was conceived in the late 1800's (Blainey, 1990), it is only in the last four-six years that the majority of players have become full-time, professional footballers (Madden, 1996). The need to go full-time is partly due to a four-fold increase in the training demands of AFL footballers over the past decade (Campbell, 1999).

The financial rewards involved in playing AFL football have further accelerated the professionalisation of AFL football and encouraged players to become even more committed to their football careers. In 1990, only 5% of players earned more than $100,000 per year (AFL, 1997). In 1999, the average salary was $105,000. With this
in mind there is ample incentive for players, particularly inexperienced players, to devote all their time to achieving the standard of fitness and skill required to play the game at the highest level (Ryan, 1999). However, sacrificing valuable educational and employment opportunities can severely limit a player's non-football career options and may lead to high levels of uncertainty about life after professional sport (Messner, 1992).

Post-football concerns are likely to be intensified by a number of other structural aspects factors that are associated with professional sport. These include:
(a) unusual entry requirements that place enormous emphasis on natural talent that has been nurtured from a young age and does not include institutionalised education as a pre-requisite (Wash, 1995);
(b) an early start-early leaving career span whereby the athlete’s career is generally over by the age of 30 years (Herr & Cramer, 1996);
(c) narrow, highly specialised job descriptions that provide very few transferable job skills (Linnell, 1998),
(d) the hierarchical world of sport, where competition for positions on the team reaches its peak at the professional level (Messner, 1992).

These organisational and structural factors are generally beyond the scope of job demand, job control and social support and, consequently, would go undetected by a study that was guided solely by the JSM.

The physical demands of the sport and the high risk of injury

One of the most unique aspects of professional Australian football, particularly when compared to a conventional occupation like management, is the physical nature of the profession. Australian football is a fast, contact sport where the risk of injury is high (Seward, 1999). Injury has been found to be a key source of strain among elite
athletes (Heil, 1993; Petitpas & Danish, 1995). Yet it is not just the pain and
discomfort associated with the injury itself that athletes find distressing. The
separation from team-mates, the loss of a daily routine and the threats to future plans
can all lead to anxiety and fear (Petitpas & Danish, 1995). The emotional impact of
athletic injury is heavily influenced by the importance of sport in the athlete's life
(Petitpas & Danish, 1995). For professional Australian footballers, the constant
pressure to perform, the all-consuming nature of the profession and their financial
dependence on their football income are all likely to increase the importance of
football in their lives. Therefore, it could be assumed that the emotional and
psychological effects of injury, particularly if career threatening, could have far-
reaching health consequences for this occupational group. This view is consistent with
research showing that the experiences of AFL footballers who retired voluntarily was
less distressing than players who were forced to retire due to injury (Fortunado, 1996).

A key limitation of this contextual review is that much of the information
pertaining specifically to professional Australian footballers has come from a
collection of unpublished sources. Unlike managers, where there have been a number
of systematic reviews of the nature and context of managerial work (e.g., Industry
Task Force on Leadership and Management Skills, 1995; Mintzberg, 1980), there is
very little contextual data pertaining to the working lives of professional Australian
footballers. Consequently, there may be other contextual factors that have not been
identified in this review that play equally significant roles in the strain experienced by
professional footballers. Despite this limitation, the review indicates that the JSM is
likely to capture several important work characteristics that contribute to job strain, in
particular, player workloads and the level of social support players receive when
injured. However other influential work characteristics – the hierarchical nature of
sport, the short career-span of AFL footballers, worries about on-field performance, post-football uncertainty, and injury – would be overlooked by the small number of work characteristics described by the JSM.

**JSM and Professional Athletes**

By itself, a review of the work context of AFL footballers and other professional athletes is inadequate for predicting the relevance of generic and job-specific models of work strain to this population. The aim of this section is to build on the contextual information already gathered and examine studies that have focused specifically on stress in sport. It is expected that this review will provide much more certainty regarding the ability of the JSM to predict the strain experienced by professional footballers.

A large proportion of the stress in sport studies has focused on acute, competition-induced stress. This includes the stress experienced by athletes (a) prior to (Gould, Horn, & Spreeman, 1983; Pierce & Stratton, 1981; Scanlan & Passer, 1978; 1979), (b) during (Hanson, 1967; Madden, Summers, & Brown, 1990) or, (c) immediately following competition (Pargman, 1986). However, the competitive experience is only a fraction of the overall sporting experience. Other aspects of the sporting experience, such as training, rehabilitation, and team meetings, need to be also considered when looking at the sources of strain experienced by professional athletes. It is these day-to-day events and situations that are likely to give rise to the chronic stressors described in the JSM and more job-specific models of job strain.

An extensive search of the stress in sport literature has revealed that there is a dearth of research on the ability of the original or the expanded version of the JSM to predict the strain experienced by athletic populations. Despite this lack of information,
there are a number of studies that have examined the influence of the individual components of the JSM, in particular, job control and social support.

The issue of control in football teams has been the subject of a small number of sociologically-based studies. The findings of this research suggest that the autocratic leadership styles of coaches is a source of frustration for some players (Coakley, 1986). Despite centralised decision-making structures dominating the day-to-day operations of many football teams, the level of decision-making authority held by players is not uniformly low. Instead, this authority varies according to the player's position on the team hierarchy. Typically, this hierarchy ranks players according to whether they are captains or vice-captains, senior or reserve players or whether they are ‘stars’ or average players (Harvey, 1999; Sabo & Panepinto, 1990). While the level of formality attached to these positions varies, these hierarchies are similar to those found in more conventional workplaces. With this hierarchy in mind, it would be reasonable to expect that some players have more power to change or avoid stressful situations than others. The JSM should therefore be just as relevant in an AFL football club as it is in more conventional workplaces.

The importance of social support is well documented in the sports psychology literature. Studies examining the stress-injury relationship among athletic populations have found that social support is an important moderator (Hardy, Richman, & Rosenfeld, 1991; Patterson, Smith, Everett, & Ptacek, 1998; Petrie, 1992; Petrie, 1993; Smith, Smoll, & Ptacek, 1990). Although these studies did not measure the relative influence of work and non-work support, other research has found that coaches and team-mates were the most frequent providers of technical support (e.g., guidance on skill development), while family and friends are common providers of
listening and emotional support (Rosenfeld & Richman, 1997; Rosenfeld, Richman, & Hardy, 1989).

The influential role of job control and social support in the lives of elite athletes suggests that the components of the JSM would explain a large portion of the strain experienced by professional Australian footballers. However, as highlighted in the review of the context that footballers work in, there are likely to be work characteristics that cannot be adequately explained by this model. Consistent with this prediction, studies that have examined the stressors experienced by athletes in other sports and at other levels of competition indicate that a significant proportion of the strain experienced by elite athletes can be attributed to job-specific work characteristics.

**Job-Specific Stressors and Professional Australian Footballers**

One of the very few studies that has examined stress among AFL footballers has focused on the sources of strain experienced by eight AFL draftees who had been relocated to interstate cities (Hanks, 2000). The study revealed that a number of situations and events were considered stressful by participants. These stressors included not knowing whether they would be drafted or not, missing family and friends, adjusting to independent living, increased intensity and duration of training, injury and the high expectations of coaches, team-mates and supporters. Although some of these stressors would be explained by the JSM (e.g., intensity and duration of training), others would not. Stressors such as the uncertainty associated with the drafting process, moving away from family and friends and adjusting to independent living are all stressors that would not be adequately captured by the JSM. However, a key limitation of this study is that the results are limited to the experiences of a small
number of draftees. The study does not take into account the experiences of recruits who were not relocated or, more importantly, players who were at other stages of their career. In light of the limited focus of the findings from the Hanks study, there is a need to examine the sources of strain experienced by players at different stages of their professional careers.

Although there is a lack of information on the sources of strain experienced by professional Australian footballers beyond AFL draftees, there are a growing number of studies that have examined the full range of stressors experienced by other elite athletes. For example, Scanlan, Stein and Ravizza (Scanlan, Stein, & Ravizza, 1991) employed a qualitative research design to identify the nature of the strain experienced by 26 former national-champion figure skaters. The open-ended questions coupled with the retrospective design enabled the researchers to identify a comprehensive set of sources of strain that “were neither transitory nor limited exclusively to competitive experiences” (Scanlan et al., 1991, p. 104). The sources of strain identified in the Scanlan et al study included:

- Negative aspects of competition (e.g. worrying about performing poorly and not wanting to let others down),
- Negative aspects of significant other relationships (e.g. interpersonal conflict and being told what to do),
- Demands/costs of skating (e.g. heavy training schedule and balancing skating and study commitments),
- Personal struggles (i.e. physical or mental difficulties and questioning commitment, etc.) and,
- Traumatic experiences (e.g. family disturbances and death of loved one).
In general, the above findings are consistent with other studies that have focused on the broader sporting experience of elite athletes (Cohn, 1990; Gould et al., 1993). For example, Gould et al. examined the sources of stress experienced by another cohort of elite figure skaters and found that a range of competition and non-competition factors were regarded as stressful by participants. Similarly, Cohn investigated the entire sporting experiences of elite high-school golfers and identified an equally diverse range of stressors.

There is considerable overlap between the stressors identified in the above entire sport studies (i.e., those that have examined competition and non-competition sources of stress) and those mentioned in the study involving AFL draftees (Hanks, 2000). For example, balancing part-time work with sporting commitments, injury and the high expectations of others were all identified by the AFL draftees and the figure-skaters and golfers. The high level of consistency in the studies that have focused on the broader sporting experience provides a strong indication that the strain experienced by professional Australian footballers will be attributed to a wide range stressors. Although some of these stressors would be captured by the JSM, others would fall outside the narrow scope of this model.

A major limitation of the entire sport studies involving figure skaters and golfers is that they were not designed to assess the influence of each stressor. Instead, these three studies were exploratory investigations that aimed to simply describe the range of events and conditions that were perceived by participants as being stressful. In-depth interviews were used to elicit this information and no steps were taken to measure the relative effects of each stressor. Furthermore, all sources of stress were recorded regardless of the number of people who reported them and irrespective of the severity of the strain experienced. In view of the lack of data on prevalence and
impact it is therefore difficult to use these studies to determine the relative influence of the generic and job-specific stressors experienced by professional athletes.

There are quantitative studies that have investigated the relationship between life stress and injuries and thus may offer some opportunity for estimating the influence of individual stressors (e.g., Blackwell & McCullagh, 1990; Coddington & Troxel, 1980; Passer & Sesse, 1983). However these studies calculated a cumulative life stress or daily hassle score and it is these overall scores that are used to predict the relationship between stress and injury occurrence (Blackwell & McCullagh, 1990; Passer & Sesse, 1983). Thus it is impossible to use the findings from these studies to predict the extent that generic and job-specific stressors would contribute to the strain experienced by athletic populations.

Although the stress-in-sport studies have largely overlooked the experiences of professional Australian footballers, and professional athletes in general, they have shed some light on the work characteristics that are likely to contribute to job strain in this profession. The studies examined in this review have identified a broad range of stressful work characteristics that go beyond the conditions described in the JSM. Similarly the review of the background context revealed generic and job-specific work characteristics that are expected to contribute to the strain experienced by AFL footballers. On the basis of these findings, it is reasonable to conclude that both generic and job-specific work characteristics would be predictive of job strain among professional Australian footballers. Furthermore, the large number of non-generic stressors that have been identified in the literature indicate that an augmented model of job strain would explain a greater portion of the variance in psychological strain than when the JSM is used alone.
Managers and Professional Footballers: Inter-Occupational Comparisons

Studies examining the work characteristics that contribute to job strain indicate that the nature and importance of these variables can vary from one occupation to the next (Narayanan et al., 1999; Sparks & Cooper, 1999). While some stressor variables have been shown to have similar importance across a number of occupations, the importance of other variables fluctuates depending on the occupation. These inter-occupational variations have been attributed to structural and cultural differences between professions (Barley, 1990; Garden, 1987; Sparks & Cooper, 1999). The aim of the following section is to identify key similarities and differences in the stressors experienced by managers and professional Australian footballers and determine the structural and/or cultural factors that can explain these variations. This part of the review will then be used to hypothesise the extent that the job-specific stressors experienced by managers and professional Australian footballers will vary.

The stressors experienced by managers and professional Australian footballers are summarised in Table 1. This table includes both the generic work characteristics contained within the JSM and the job-specific stressors. In recognition of the lack of research examining the sources of strain experienced by professional Australian footballers, the stressors experienced by this occupational group have been based on (a) the review of the work context of AFL footballers, and (b) extrapolations from previous stress in sport studies that have involved elite athletes from other sports. It should also be noted that the majority of the stress in sport studies cited in Table 1 (i.e., Cohn, 1990; Gould et al., 1993; Hanks, 2000; Messner, 1992; Sabo & Panepinto, 1990; Scanlan et al., 1991) were qualitative and did not attempt to measure the relationship between the sources of stress and health outcomes. Consequently these studies have listed all sources of strain identified by study participants regardless of
the number of people who reported them or the severity of the strain experienced. In contrast, many of the studies involving managers (i.e., Bogg & Cooper, 1995; Cavanaugh et al., 2000; Leong et al., 1996; McCormick & Cooper, 1988; Menon & Akhilesh, 1994; Rout, 1999) aimed to identify those work characteristics that were predictive of job strain and only those work characteristics that reached statistical significance in these studies have been listed in Table 1. The stressors identified in the managers column therefore represent the most significant sources of strain experienced by this occupational group; not all sources of strain. To aid comparisons between managers and professional Australian footballers, the job-specific stressors listed in Table 1 have been grouped according to the five major categories of work stress identified by Cooper and Marshall (1978).

The findings presented in Table 1 reveal that there are both similarities and differences in the work characteristics that contribute to the strain experienced by managers and professional footballers. An assessment of the inter-occupational differences and similarities indicates that the stressors are closely linked to the structural and cultural characteristics that dominate each occupational group.
Table 1

Inter-occupational comparisons: the stressors experienced by managers and professional Australian footballers

<table>
<thead>
<tr>
<th>Source of stress</th>
<th>Managers</th>
<th>Professional Australian footballers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrinsic to the job</td>
<td>Long working hours (Cooper &amp; Marshall, 1978; Worrall &amp; Cooper, 1995)</td>
<td>Long/heavy training sessions (Gould et al., 1993; Hanks, 2000; Scanlan et al., 1991)</td>
</tr>
<tr>
<td></td>
<td>Work overload (Cooper &amp; Marshall, 1978)</td>
<td>Injury (Petitpas &amp; Danish, 1995; Scanlan et al., 1991)</td>
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<tr>
<td></td>
<td>Time pressures (Leong et al., 1996)</td>
<td>Public scrutiny (Gould et al., 1993)</td>
</tr>
<tr>
<td></td>
<td>New technology (Burke &amp; Leiter, 2000; Cooper, 1984)</td>
<td>Performance pressures (Gould et al., 1993; Messner, 1992; Scanlan et al., 1991)</td>
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<tr>
<td></td>
<td></td>
<td>Worrying about performing poorly (Cohn, 1990; Gould et al., 1993; Scanlan et al., 1991)</td>
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<tr>
<td></td>
<td></td>
<td>All-consuming nature of professional sport (Brewer, Van Raalte, &amp; Linder, 1993; Messner, 1992)</td>
</tr>
<tr>
<td>Source of stress</td>
<td>Managers</td>
<td>Professional Australian footballers</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Role in the organisation</strong></td>
<td>Responsibility for others (Broadbridge, 1999; Cooper &amp; Marshall, 1978)</td>
<td>Role ambiguity (Cavanaugh et al., 2000; Menon &amp; Akhilesh, 1994)</td>
</tr>
<tr>
<td></td>
<td>Role ambiguity (Cavanaugh et al., 2000; Menon &amp; Akhilesh, 1994)</td>
<td>Role conflict (Cooper &amp; Marshall, 1978)</td>
</tr>
<tr>
<td><strong>Career development</strong></td>
<td>Threat of job loss (Burke &amp; Leiter, 2000)</td>
<td>Threat of job loss (i.e., delistment)*</td>
</tr>
<tr>
<td></td>
<td>Job insecurity (Burke, 1988; Cavanaugh et al., 2000)</td>
<td>Short career-span (Ogilvie &amp; Howe, 1982)</td>
</tr>
<tr>
<td></td>
<td>Career blockages (Bogg &amp; Cooper, 1995; Cavanaugh et al., 2000)</td>
<td>Post football uncertainty*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of opportunities to develop non-football job skills*</td>
</tr>
<tr>
<td><strong>Relationships at work</strong></td>
<td>Lack of support (Leong et al., 1996)</td>
<td>Lack of support (Patterson et al., 1998; Petrie, 1993)</td>
</tr>
<tr>
<td></td>
<td>Interpersonal conflict (Leong et al., 1996; Rout, 1999)</td>
<td>Interpersonal conflict (Harvey, 1999; Scanlan et al., 1991)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Partiality by coach (Gould et al., 1993)</td>
</tr>
</tbody>
</table>
Table 1 (Cont.)

<table>
<thead>
<tr>
<th>Source of stress</th>
<th>Managers</th>
<th>Professional Australian footballers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organisational structure and climate</td>
<td>Lack of input into decision-making (Cooper &amp; Hensman, 1985; Cooper &amp; Marshall, 1978)</td>
<td>Lack of input into decision making (Coakley, 1986; Scanlan et al., 1991)</td>
</tr>
<tr>
<td></td>
<td>Lack of autonomy (Bogg &amp; Cooper, 1995)</td>
<td>Hierarchical world of sport (Messner, 1992)</td>
</tr>
<tr>
<td></td>
<td>Budget cut-backs (Burke &amp; Leiter, 2000; Jick, 1983)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Poor communication (Rout, 1999)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Organisation slow to react to new situations (Cooper &amp; Marshall, 1978)</td>
<td></td>
</tr>
<tr>
<td>Work-home interface</td>
<td>Conflict between work and family commitments (Broadbridge, 1999; Cooper &amp; Marshall, 1978)</td>
<td>Conflict between work and study/2\textsuperscript{nd} job (Gould et al., 1993; Hanks, 2000; Scanlan et al., 1991)</td>
</tr>
<tr>
<td></td>
<td>(Broadbridge, 1999; Cooper &amp; Marshall, 1978)</td>
<td>Missing family and friends (Hanks, 2000)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Adjusting to independent living (Hanks, 2000)</td>
</tr>
</tbody>
</table>

* The stressors experienced by this occupational group have been based on (a) the review of the work context that AFL footballers work in, and (b) extrapolations from previous stress in sport studies that have involved elite athletes.

* Denotes that stressor is based on background contextual information and has not been identified in previous research.
Inter-Occupational Similarities: JSM variables

A review of the literature involving management and elite athletic populations has shown that individual components of the JSM are likely to be as applicable to an unconventional occupational group like professional footballers as they are to a conventional group such as managers. In terms of job demand, work overload has been identified as a key source of strain for managerial personnel (Cooper & Marshall, 1978), while for footballers, heavy training sessions have been reported by AFL draftees as being a source of strain (Hanks, 2000). Job control has also been linked to the health of both occupational groups. The level of job control reported by managers has been found to be predictive of job strain in this profession (Cooper & Hensman, 1985). Likewise, elite athletes participating in team sports have reported that the autocratic leadership styles of coaches is a source of frustration (Coakley, 1986). The final component of the JSM, social support, has also been linked to the health of managers and elite sports-people. For example, Leong et al. (1996) found that the support of supervisors was predictive of the strain experienced by managers. In the case of elite athletes, studies show that the stress-injury relationship is moderated by the support athletes receive from others (Patterson et al., 1998; Petrie, 1993).

The relevance of the JSM to managers and professional and elite athletes raises the possibility that, irrespective of how conventional or unconventional the occupation is, job demand, job control and social support will play influential roles in the strain experienced by workers. Although unconventional occupations, such as professional sport, have not figured prominently in previous JSM studies, the aforementioned research suggests that
this model will have broad cross-occupational relevance. This view is supported by studies showing that the JSM had strong predictive value across a range of occupational groups, including machine operators, carpenters, nurses, bank officers and managers (Karasek, 1979; Karasek & Theorell, 1990).

**Inter-Occupational Similarities: Job-Specific Variables**

Aside from the dimensions of the JSM, there are other similarities in the stressors experienced by managers and footballers. The literature reviewed in the previous subsections has revealed that the threat of job loss and interpersonal conflict are sources of strain that have been identified in studies involving managers and professional Australian footballers/elite athletes. These similarities can be linked to structural and cultural characteristics that are important for both occupational groups.

For managers, the threat of job loss and job insecurity can be seen to be an extension of the enormous structural changes that have occurred in both the public and private sector over the past decade (Burke & Leiter, 2000; Littler et al., 1997). These changes, including downsizing and delayering, budget cut-backs, and, overall, increasing competitive pressures, have transformed traditionally secure managerial positions into insecure ones (Hunt, 1986). The job insecurity experienced by professional Australian footballers could also be linked to the structure of the occupation. Players who have their contract terminated, not only lose their major source of income but, in light of the specialised nature of their profession and the lack of opportunities for gaining non-football employment skills, face an uncertain future in the more conventional job market (Horn, 1997; Ryan, 1999). Combined with an early start-early leaving career structure of
professional sport (Ogilvie & Howe, 1982; Wash, 1995), it is not surprising that the threat of job loss is a key source of strain for AFL footballers.

The stressor, interpersonal conflict, is also a reflection of the work characteristics that are important for each occupation. While conflict is an integral feature of any occupation or working environment, there is evidence that much of the inter-personal conflict experienced by managers and professional footballers is, in part, a function of the structure and nature of their occupations. The position of managers in an organisation typically places them at the interface between the most senior members of the organisation and shop-floor employees (Albrecht, 1979; Denham et al., 1997). In this position, many managers are responsible for managing the sharpest point of conflict in employment relations (Denham et al., 1997). In light of the propensity for misunderstandings and disagreements to arise between employers and employees, it is reasonable to expect that managers would experience high levels of interpersonal conflict purely as a result of their position and the unique responsibilities they hold. For professional Australian footballers, the prominence of interpersonal conflict is strongly influenced by the hierarchical world of sport. Although sporting teams often try to promote a united, ‘family’ image, the day-to-day web of relationships among teammates involve an intricate flux between cooperation and competition (Harvey, 1999). This competition reaches its peak at the most elite level where players are competing against each other for playing time, positions in the team, and ultimately, a contract with the club. In this environment conflict between team-mates is an inevitable by-product of the structure of professional football.
Inter-Occupational Differences: Job-Specific Variables

Table 1 reveals that there are a large number of differences in the job-specific stressors experienced by managers and professional Australian footballers. The aim of this section is not to discuss all these differences. Instead, this section will focus on a number of the key differences identified in Table 1 and describe the extent to which they are linked to the structural characteristics that define each occupation.

Being responsible for people (Broadbridge, 1999; Cooper & Marshall, 1978) and work-family conflict (Broadbridge, 1999) have been identified as being key sources of strain for managers but not for professional athletes. In the case of being responsible for people, this stressor reflects one of the most critical roles of a manager; managing human resources (Carroll & Gillen, 1987; Mintzberg, 1980). In light of the importance of this role, it follows that being responsible for staff would potentially be a major source of strain for managers. In an athletic environment, however, coaching and support staff are generally responsible for people management tasks. Aside from team captains, individual players generally have very little responsibility for anyone but themselves. It is only logical then that professional athletes would be far less likely to experience strain resulting from the responsibility for others.

The demographical profile of each occupational group can also help explain why the job-specific stressor, work-family conflict, has been reported as a key sources of strain for managers but not for professional Australian footballers (Bogg & Cooper, 1995; Broadbridge, 1999; Cooper & Marshall, 1978). The dramatic rise in the number of dual income families (Wright & Sheridan, 1998) combined with the long working hours undertaken by many managers (Worrall & Cooper, 1999) are key reasons why managers
are particularly vulnerable to the strain associated with work-family conflict. However, with over 70% of players aged between 18-24 years, the vast majority of AFL footballers do not have children and hence are not burdened with the same parental responsibilities that many managers would have (Cameron Sinclair, Statistics & Media Department, AFL; personal communication, April 5, 2001).

Just as there are stressors that are experienced by managers, but not professional footballers, there are stressors that appear to be key sources of strain for professional footballers but not managers. Injury is perhaps the most obvious example of such a stressor. Australian football is a particularly physical sport where the risk of injury is high (Seward, 1999). In addition to the injury itself, the separation from team-mates, the loss of a daily routine and the threat of job loss can all lead to strain (Petitpas & Danish, 1995). By contrast, the job of a manager is far less physical than that of a professional athlete and hence the risk of injury is relatively small (Burke, 1988). Even if a manager was to sustain an injury, or was forced to take time off work because of a work-related injury, in most cases industrial relations laws would protect the worker and it is unlikely that this would lead to job loss. The relatively low risk of injury would then explain why injury or illness has not been identified as common sources of strain for managers.

Predicting the Inter-Occupational Relevance of the Augmented JSM

Overall, the similarities and differences in the stressors experienced by managers and professional Australian footballers provide considerable support for augmenting generic models of job strain with more occupational specific models. The strong connections between job-specific work characteristics and the key sources of strain experienced by managers and professional footballers, supports calls for occupational stress researchers
to employ augmented models of job strain. At the same time, the inter-occupational relevance of the individual components of the JSM suggests that the dimensions of this model provide a sound basis on which to develop a more job-specific model. More specifically, there is sufficient evidence to suggest that both the generic components of the JSM and job-specific stressors will each account for significant proportions of the strain experienced by conventional and unconventional occupations.

However, since the relative influence of the JSM and job-specific stressors has not been examined in previous research, there is still some doubt over the predictive capacity of an augmented JSM. This doubt stems primarily from studies that have found the JSM to have strong predictive value among a wide range of occupational groups (Karasek, 1979; Karasek et al., 1981; Karasek & Theorell, 1990). Although these studies have not included highly unconventional occupations like professional sport, there is sufficient evidence to expect that the JSM will also explain a significant proportion of the strain experienced by professional footballers.

In conclusion, the similarities and the differences in the stressors experienced by managers and athletes help to predict the extent that the stressors will vary in the proposed study. Although it is expected that the components of the JSM and some job-specific stressors (such as the threat of job loss and interpersonal conflict) will be common to both occupational groups, it is anticipated that others (such as work-family conflict and injuries) will be very different. Moreover, it is expected that the work structures and characteristics that are important for each occupation will have a large influence on the specific stressors that are found to be predictive of job strain. Yet, what is still largely unknown, is the extent that the JSM and job-specific stressors will explain
the variations in job strain. There is considerable evidence to suggest that both will account for significant proportions. However, since there is limited information on the relative influence of the JSM and more job-specific stressors in previous research, there is still some doubt over the predictive capacity of the augmented model. This doubt is exacerbated by the lack of information on the ability of the JSM to predict strain in a highly specialised and unconventional occupation like professional sport.

Present Study: Hypotheses, Implications and Contributions to the Literature

The overall purpose of this study is to test the capacity of the generic components of the JSM and job-specific stressors to predict the strain experienced by two occupational groups: managers and professional Australian footballers. The results of this study will have important practical implications. One of the risks of basing occupational stress investigations on only three work characteristics - demand, control and social support - is that there may be other situations or conditions that are equally stressful and yet are overlooked because the JSM does not take them into account (Sparks & Cooper, 1999). The failure to consider these other factors may ultimately result in misinformed interventions that do not adequately address the most significant sources of strain. However, research into the relative influence of generic and job-specific stressors has only recently emerged and not all generic models have been subjected to empirical tests. Much of the published research that has been designed to address the generic versus job-specific issue has focused on the influence of role stressors (Bacharach & Bamberger,
1992; Beehr et al., 2000; Narayanan et al., 1999) and there is limited information on the comparative influence of the generic variables contained in the JSM.

The JSM and its individual dimensions have been found to be significant predictors of a range of health outcomes (Cohen & Syme, 1985; Dwyer & Ganster, 1991; Fox et al., 1993; Karasek & Theorell, 1990; Perrewe & Ganster, 1989; Thompson, 1981). Individually, job demand, job control and social support have also been shown to be predictive of job strain in a variety of occupational groups, including managers (Cooper & Hensman, 1985; Leong et al., 1996). While there is limited information on the ability of the JSM to predict the strain experienced by professional athletes (and other unconventional, minority occupations), there is evidence to suggest that social support (e.g., Hardy et al., 1991; Petrie, 1993) and, to a lesser extent, job control (Coakley, 1986; Sabo & Panepinto, 1990) are applicable to this occupational group. At the same time, previous research involving elite athletes (e.g., Scanlan et al., 1991) and managers (e.g., Cooper & Marshall, 1978) has shown that there are stressors experienced by these two groups that would not be adequately explained by the JSM. On the basis of these findings, it is hypothesised that:

Hypothesis 1. Both the generic dimensions of the JSM and job-specific stressors will be significant predictors of the strain experienced by managers and professional Australian footballers.

If the present study reveals that both the JSM and job-specific stressors are predictive of job strain (i.e., the results support Hypothesis 1) then this study will strengthen calls for researchers to combine generic models with job-specific measures of job strain. However, a job-specific stressor can be found to be predictive of job strain and yet the
job-specific model can, overall, still fail to explain a significant proportion of the variance in strain outcomes. A more telling result would therefore be the amount of explained variance that is attributed to the generic and job-specific models respectively.

The findings of previous studies indicate that a combined model of job strain - where the generic model has been augmented by job-specific stressors - will explain a significantly greater proportion of job strain than if the generic model is used alone. These results have led to the following hypothesis being developed.

**Hypothesis 2.** The augmented JSM will explain significantly more of the variance in job strain than if the JSM is used alone.

Results that support Hypothesis 2 will enhance the view that the generic models are too narrow to provide an adequate understanding of the work-strain relationship (Sparks & Cooper, 1999). Furthermore, such a finding would strengthen the argument that models consisting of a larger range of variables will explain more of the variance in strain outcomes and hence give a more detailed insight into the sources of job strain (Fletcher & Jones, 1993). Ultimately, a model that can provide this detailed insight will have significant practical benefits. The accurate identification of workplace stressors will reduce the likelihood that stressful work characteristics are overlooked and, thus, lead to more effective strain reduction strategies.

Results that fail to support Hypothesis 2 could have equally important implications. The identification of stressors that are specific to the occupation/s being investigated can be time consuming for practitioners, disruptive for employees and employers and, overall, a very costly exercise (Jex et al., 1997; Narayanan et al., 1999). Practitioners who seek to identify the more situation-specific stressors therefore need to be reasonably
certain the resources they invest in attempting to identify the job-specific variables will be cost-effective. However, if this study finds that these variables only account for a small proportion of the variation in the strain experienced by the two occupational groups, and the JSM is shown to have strong predictive value, then this would suggest that identifying the job-specific stressors is not a sound investment of time and resources. Moreover, this finding would indicate that the variables described in the JSM already provide accurate explanations of the strain experienced within conventional and unconventional occupations and no augmentation is needed.

The third hypothesis is based on the assumption that hypothesis one is supported by the findings from this study. Research examining the sources of strain experienced by professional athletes and managers indicates that there are similarities and differences in the job-specific stressors experienced by each group. These variations can be seen to reflect the important characteristics that are inherent in each occupation, in particular the structure of the profession. In recognition of these findings, it is hypothesised that:

**Hypothesis 3.** There will be both similarities and differences in the job-specific stressors that are predictive of the strain experienced by managers and professional Australian footballers.

**Hypothesis 4.** The variations in the job-specific stressors will be attributable, in a large part, to the important characteristics of each occupation.

While support for Hypotheses 1 and 2 will further highlight the need to utilise more job-specific models of job strain, evidence relating to Hypotheses 3 and 4 will help identify the nature of, and meaning behind, the job-specific stressors. If the differences and similarities in the job-specific stressors experienced by both occupational groups can
be linked to important characteristics within each occupation then this will reinforce the need for researchers to identify these characteristics as a preliminary step in the investigative process.

Describing important work characteristics that give rise to job stressors also provides the opportunity to identify other occupational groups that are at risk of experiencing the same stressors. For example, if the unique work characteristics that define professional Australian football (e.g., early start-early leaving career structure) are closely connected to the stressors impacting on this population, then this would suggest that similarly structured occupations (e.g., professional dancers) would also be vulnerable to these sources of stress. As a consequence, the augmented JSM that is developed for each occupational group in this study may be found to be just as relevant to other occupations that share similar characteristics. This outcome would be particularly valuable to unconventional occupations, such as those in the arts and entertainment industry, where little is known about the work characteristics that contribute to job strain (Sternbach, 1995).

A key component of the JSM is social support. However, there are conflicting reports over the relative influence of work and non-work support. The findings of several cross-sectional studies indicate that support from work supervisors and colleagues is associated with lower levels of strain (House & Wells, 1978; Karasek et al., 1982; Yang & Carayon, 1995). In contrast, more recent research has found that the support from family and friends is predictive of job strain (Munro et al., 1998). In the case of studies involving elite athletes and managers, both sources of social support were reported to prevent or
reduce occupational strain (Patterson et al., 1998; Petrie, 1993). As a result of these findings, it is hypothesised that:

**Hypothesis 5.** Both work and non-work sources of social support will be significant predictors of the strain experienced by managers and professional Australian footballers.

The results relating to this final hypothesis will provide valuable information on the relative influence of work and non-work support. It is unclear which source of support is more influential in preventing or reducing job strain. The findings addressing Hypothesis Five can therefore help identify areas where efforts to improve social support need to be focused.

In conclusion, this study will make a number of specific contributions to the field of occupational stress. Firstly, the proposed research will test the relative influence of the generic work characteristics contained within the JSM and job-specific stressors. These findings will then provide a more accurate understanding of the work characteristics that are predictive of job strain. This enhanced understanding is critical for informing the development of more effective, needs-based stress prevention strategies. At a more theoretical level, the inclusion of an unconventional occupation in this study will test the broader occupational relevance of the JSM (i.e., less augmentation). Studies assessing the JSM have tended to focus on large, conventional occupational groups and thus little is known about the relevance of this model to occupations that are characterised by less conventional features (e.g., an early start-early leaving career pattern). Providing that job-specific stressors are found to be predictive of strain, this study will also help better understand the extent that job-specific stressors vary between occupations and the degree
that they are an extension of the work characteristics that are important in each occupation. Establishing a stronger connection between important work characteristics and job stressors will further emphasise the need for researchers and practitioners to identify these characteristics early in the research process. Finally, this study will help clarify the contribution made by work and non-work sources of social support and, hence, will provide researchers and practitioners with a more informed basis on which to enhance employee support.
CHAPTER 3: METHOD

The primary aim of this thesis is to assess the ability of the JSM and job-specific stressors to predict the strain experienced by two occupational groups; managers and professional Australian footballers. The key reason for selecting managers and professional Australian footballers was that they represented two very different occupational groups.

Management is a conventional occupation that represents seven percent of the Australian workforce (Australian Bureau of Statistics, 1999). Furthermore this occupation can be found in most organisations, regardless of industry type or organisational size (Industry Task Force on Leadership and Management Skills, 1995). In contrast, professional Australian football is a minority occupation that consists of little over 700 members (AFLPA, 1999). Management and professional football are also structured very differently. Management is a late start-late leaving occupation whereby members generally enter this profession already with high levels of formalised education and on-the-job training (Herr & Cramer, 1996; Wash, 1995). By comparison professional Australian football is an early start-early leaving occupation that relies heavily on natural talent that has been nurtured from a young age. However the greatest disparity between these occupations is reflected in the nature of the tasks typically undertaken by each group. While the day-to-day roles of a manager include planning, organising, monitoring and controlling (Carroll & Gillen, 1987), the working life of a professional Australian footballer revolves around preparing for and playing football (Shanahan, 1998).

It is expected that the large differences between managers and professional Australian footballers, particularly in terms of the work undertaken, would maximise the
opportunities for measuring the cross-occupational versatility of the augmented JSM and measuring the extent that job-specific stressors vary between occupational groups.

Despite the large differences in the nature of the work undertaken by managers and professional Australian footballers, the literature review supported the hypothesis that the generic components of the JSM and the more situation-specific stressors are likely to both be predictive of the strain experienced by these two occupations. Furthermore, it is hypothesised that the augmented JSM -where job demand, job control and social support have been augmented by job-specific stressors - will account for significantly more of the explained variance in job strain than if the JSM was used alone. The third hypothesis to be tested in this study is that there will be both similarities and differences in the job-specific stressors that are predictive of the strain experienced by managers and professional footballers. Continuing from this prediction, the fourth hypothesis states that the variations in the job-specific stressors will be attributed, in a large part, to the important characteristics of each occupation. The final hypothesis to be examined in this study addresses the relative influence of work and non-work support. It is expected that both forms of social support will be predictive of the strain experienced by managers and professional footballers.

Three studies have been designed to investigate and test the above hypotheses. Study One is largely a quantitative study aimed at assessing the capacity of the JSM and job-specific stressors to predict the strain experienced by managers. A survey of Australian managers will be undertaken and this survey will consist of a self-completed questionnaire. The questionnaire will comprise of previously validated scales that have been designed to measure the independent and dependent variables. The only exception
here is the job-specific scale. In this case, two pilot studies will be undertaken to identify stressors that are typically experienced by this occupational group.

The findings from Study One will then be compared with the results of a study involving the more specialised and less conventional occupational group; professional Australian footballers. The literature review revealed that there is a lack of published information on the sources of stress experienced by this occupational group. While useful information can be gained from studies involving other sports, such as figure skaters and high-school golf, there are large organisational, cultural and economic differences between these sports and professional Australian football. With this limitation in mind, it is important to undertake a more in-depth study to identify the work characteristics that contribute to the strain experienced by this group. The aim of Study Two is therefore to identify the range of situations, issues and events that contribute to the stress experienced by a sample of professional Australian footballers participating in the Australian Football League (AFL). The AFL is the premier Australian football competition involving 736 registered players spread across 16 clubs and located in five Australian states (AFLPA, 1999). Each club consists of a list of 40 players (plus six ‘supplementary’ players) who compete in senior and reserve-grade competitions.

In addition to describing the types of situations and events that contribute to player stress, Study Two is also designed to provide a greater understanding of why these factors are considered stressful. Qualitative research methods, involving in-depth interviews and focus groups, will be used to elicit information regarding the nature of, as well as the meaning behind, the stressors experienced by professional Australian footballers. The results of Study Two will ultimately serve two purposes. Firstly, the
sources of stress identified in the interviews and focus groups will inform the development of a job-specific stressor scale that will be used in Study Three. In addition, the contextual information derived from Study Two will help to establish the extent that the stressors experienced by AFL footballers are linked to the structural and social characteristics that are important in this occupation.

The third study will involve a survey of all professional Australian footballers and is aimed at assessing the capacity of the augmented JSM to predict the strain experienced by this occupational group. The results of Studies One and Three will then be used to answer the research hypotheses. The following chapter will describe the research methods used to undertake each of these studies.

**Study One: A Survey of Managers**

The focus of Study One is to investigate the capacity of the JSM, as well as job-specific stressors, to predict the wellbeing and job satisfaction experienced by a cohort of Australian managers. A survey, consisting of a self-report questionnaire, will be used to undertake this investigation.

**Participants and Procedure**

The participants in Study One were members of a Master of Business Administration (MBA) alumni association. The majority of these members were in managerial positions within private and public sector organisations and were based in Australia. Five hundred and fifty members who were listed on the alumni association’s mailing list
were invited to take part in this study. Questionnaires were sent directly to members. A covering letter requested members to complete their questionnaires and return them to the author in a stamped, self-addressed envelope. After two weeks, a reminder notice was distributed and replacement questionnaires were provided for those members who had lost or misplaced their original copy.

Twenty-seven members were no longer at the address provided by the alumnus association, and four questionnaires were returned because the alumni did not wish to participate. Of the remaining 519 members, 221 completed and returned their questionnaires; a response rate of 42.5%. This sample consisted of 172 males and 49 females and just over 80% of respondents were aged between 31 and 50 years of age. Furthermore, all respondents had completed an MBA. Although the age and gender distribution was similar to the broader population of Australian managers (Australian Bureau of Statistics, 2000), the level of education was vastly different. In 1993, only 10,950 (i.e., 1%) Australian managers had masters by course-work qualifications (Industry Task Force on Leadership and Management Skills, 1995). Although forecasts predict that this figure would double in five years, the proportion of managers who have higher degrees is still very small. The difference in education levels between study participants and the wider population of Australian managers is a key limitation and the implications of this constraint will be discussed in Chapter 5.

Measures

The questionnaire used in this study (refer Appendix B) was divided into three sections. The first section included two self-report scales that were designed to measure the dependent variables, psychological health and job satisfaction. The scales covered in the
second section assessed the independent variables and these included job control, job demand, social support and job-specific stressors. In the third section, respondents were requested to provide demographic information, including age, marital status and the number of people who reported to them.

Psychological health

The GHQ-12 (Goldberg & Williams, 1988) was used to measure self-perceived psychological health. The GHQ-12 has been designed to be a valid indicator of current psychological health (Banks et al., 1980). The scale itself consists of two sets of six items. The first set deals with healthy functioning and the second set deals with abnormal functioning. Participants were asked to complete a four-point scale ranging from ‘not at all’ (scored as zero) to ‘much more than usual’ (scored as three). The scale had a Cronbach's alpha of 0.81. The six items that deal with abnormal functioning were reverse coded so that higher GHQ scores indicated higher levels of perceived health.

Job satisfaction

Job satisfaction was measured using a scale developed by Warr et al. (1979). The 15-item scale was designed to measure the level of satisfaction/dissatisfaction felt by subjects in relation to various features of work conditions, management, promotion, salary, job security, and co-workers. Participants were asked to respond on a seven-point scale ranging from ‘very satisfied’ to ‘very dissatisfied’ (i.e., the higher the score, the higher the dissatisfaction). The scale had a Cronbach's alpha of 0.91.
Control

Participant perceptions of the amount of control they experienced at work were measured using the 22-item scale developed by Dwyer and Ganster (1991). The scale covers a range of work domains, including the control over the variety of tasks performed, pacing, scheduling of rest breaks, procedures and policies in the workplace, and the arrangement of the physical environment (Fox et al., 1993). Participants were asked to respond on a five-point scale ranging from ‘not at all’ to ‘a great deal’. The scale had a Cronbach’s alpha of 0.92.

Job demand

The Quantitative Workload scale (Caplan, Cobb, French, Harrison, & Pinneau, 1980) was used to measure job demands. This is an 11-item scale that assesses perceptions of the amount and the pace of each participant’s workload, and encompassed both psychological and physical job demands. Participants were asked to respond on a five-point scale ranging from ‘rarely’ to ‘very often’. The scale had a Cronbach’s alpha of 0.89.

Social support

Support in work and non-work life were measured separately using the 20-item scale developed by Etzion (1984). Participants were asked to indicate the level of emotional, informational, instrumental and appraisal support they received from work (i.e., supervisors, co-workers and subordinates) and non-work sources (i.e., family and friends). Ten of the items assessed the level of support received from work sources while the remaining ten measured the support from non-work sources. Participants recorded
their responses on a seven-point scale ranging from ‘very much’ to ‘very little’. The Cronbach’s alpha for the work and non-work sub-scales were 0.86 and 0.89 respectively.

**Job-specific stressors**

Participants were asked to complete a 21-item, sources of stress scale that required them to indicate the extent that each of the factors listed were a source of stress in their job as a manager. A five-point scale ranging from ‘not at all’ to ‘major source of stress’ was provided. The job-specific stressors scale was based on the results of two pilot studies involving managers enrolled in a University-based Master of Business Administration (MBA) program. These pilot studies were designed to ensure that the self-report scale reflected the stressful work characteristics that were most relevant to managers. Research examining the relative influence of generic and job-specific stressors has used generalised self-report scales to measure the more situation-specific stressors (Sparks & Cooper, 1999). However these scales were not tailored to the specific needs of each occupation. A key limitation of the Sparks and Cooper study was that there may have been occupation-specific stressors that were obscured or overlooked by the generalised nature of the ‘job-specific’ stressors (Sparks & Cooper, 1999). The present study will improve on this methodology by utilising a job-specific sources of stress scale that is specific to managerial personnel.

The first pilot study consisted of a semi-structured discussion group involving 26 members of the current MBA program. All members were enrolled in the program on a part-time basis, were working in full-time management positions and were completing a core management unit (i.e., compulsory subject) at the time of the discussion group. Within this group discussion, open-ended questions were employed to enable the
managers to identify, in their own terms, the work characteristics they considered were major sources of stress. Similar qualitative techniques have been used in occupational settings to identify many job-specific stressors previously overlooked by generalised self-report scales (Narayanan et al., 1999; Newton & Keenan, 1985).

The discussion group was facilitated by the researcher who had undertaken training in qualitative data collection techniques. Initially, participants were asked to identify the key sources of stress in their job as a manager. The specific question posed to participants was “as a manager, what situations, events or issues cause you to become stressed?” Elaboration probes were used to encourage greater detail on particular sources (Bernard, 1988; Hudleson, 1994). In addition, more general probes were employed to ensure that non-work factors were taken into account when considering the factors that contribute to stress. Respondent validity was assessed by recording abbreviated responses on a whiteboard (Mays & Pope, 2000). Participants were instructed to assess the accuracy of the items as they were recorded. A self-report scale based on the results of the first pilot was then developed and included in a draft questionnaire.

The external validity of the job-specific stressors scale was assessed using two forms of member validation (Mays & Pope, 2000). The first form involved a second pilot study where seventeen members of another MBA unit completed the entire draft questionnaire. Participants were asked to give careful consideration to the job-specific stressors scale and were required to identify any items on the stressors scale that were ambiguous or irrelevant to their job as a manager. At the same time, participants were asked to add any items that they felt were major sources of stress and were not listed on the scale. This process did not result in any items being considered completely irrelevant. However, two
items on the draft scale were considered to be very similar to other items and, after consulting with a researcher experienced in occupational stress research, one of these items was omitted while the other was re-phrased. Only two of the respondents noted an additional source of stress that they felt was not already listed. Both of these suggestions were more specific versions of items that were already listed and, consequently, were not included the final sources of stress scale. A copy of this scale can be found in Appendix B, Study One questionnaire.

The second form of member validation aimed to identify the level of consistency between the sources of stress scale resulting from the piloting process and previous research involving managerial personnel. These comparisons revealed numerous parallels with studies investigating the sources of managerial stress. For example, a lack of job security, career blockages, interpersonal conflict and work-family conflict have been identified in previous research (Bogg & Cooper, 1995; Broadbridge, 1999; Cavanaugh et al., 2000; Cooper & Marshall, 1978; Leong et al., 1996; McCormick & Cooper, 1988; Rout, 1999). Similarly, the first pilot study identified the possibility of being retrenched or made redundant, lack of opportunity to take on more senior roles, conflict with senior management or colleagues and difficulty balancing work and non-work commitments as sources of stress for participants. The stressors identified in the pilot study are also consistent with significant social and economic changes that have occurred in recent times. For example, the concern participants expressed regarding the possibility of being retrenched is reflective of large-scale delayering and downsizing that has impacted heavily on middle management over the past decade (Littler et al., 1997). Likewise the stress associated with working long hours and work and non-work conflict highlight the
effects of the efficiency drives that have been an integral feature of organisations throughout the 1980's and 1990's. Managers are continually trying to 'do more with less' and, as a result, are having to spend more and more time at work (Worrall & Cooper, 1999). Combined with the dramatic increase in the number of dual income families over the past thirty years (Wright & Sheridan, 1998), it is not surprising that the difficulty associated with balancing work and non-work commitments was a source of strain for some participants in the pilot study.

Overall, the results of the second pilot study, combined with the high level of consistency with previous research involving managers, indicate that the stressors described in the self-report scale are an accurate representation of the sources of stress commonly experienced by managers. In-turn, this level of member validity is critical for ensuring that the job-specific stressors are given the best possible chance of being predictive of managerial job strain.

Study Two: Stress and Professional Footballers: An Exploratory Study

This section describes the methods used to identify the sources of stress experienced by AFL footballers. The literature review revealed that professional Australian footballers are greatly under-represented in the occupational stress literature. Consequently there is very little published information on the sources of stress experienced by this occupational group. The primary purpose for undertaking the following exploratory study is therefore
to create the occupation-specific items that will be used to augment the JSM in Study Three.

A two-stage pilot study similar to that used in Study One could have been undertaken to identify the work characteristics that contributed to the job strain experienced by footballers. However the data collection techniques used in this pilot study were considered too superficial to elicit the detailed responses that were required in the present study.

In addition to identifying the job-specific stressors experienced by professional Australian footballers, the second major aim of Study Two is to provide a more detailed explanation of why these stressors exist. In the case of a conventional, mainstream occupation like managers, a description of the context that leads to commonly experienced job stressors is more readily available. For example, numerous studies have examined the structural, social and economic factors that have contributed to high levels of job insecurity and career development problems among middle and lower managers (refer Burke & Leiter, 2000, for a review of these). Likewise, a number of authors have reported on the changing nature of managerial work and highlighted the health implications of these changes (Cartwright & Boyes, 2000; Quick et al., 1990). With this type of contextual information available, the links between job stressors and those work characteristics that are considered important in managerial work can be readily established. In the case of professional Australian footballers, however, there is not only a lack of information on the sources of stress experienced by this occupation (much of the data presented in the literature review was extrapolated from other, non-professional sports). There is also little known about the work characteristics that are important in this
occupation. A major limitation of the data used to describe the work context experienced by professional Australian footballers was that much of the information came from unpublished sources. Unlike managers, where there have been a number of systematic reviews of the nature and context of managerial work (e.g., Carroll & Gillen, 1987; Industry Task Force on Leadership and Management Skills, 1995; Mintzberg, 1980), there is very little contextual data pertaining to the working lives of professional Australian footballers.

On the basis of the lack of information regarding the nature and context of stressors experienced by professional Australian footballers, a more comprehensive qualitative research design has been employed in Study Two. A series of open-ended, semi-structured interviews and focus groups, combined with more rigorous data collection techniques and methods of analysis, will be used to provide detailed insights into the structural and social characteristics that give rise to the stressors experienced by professional footballers. As a result, Study Two will play a key role in better understanding the extent that job stressors are linked to the characteristics that are important in this profession, as well as the stressors themselves.

The qualitative approach employed in Study Two has been commonly employed at the beginning of a research process where the key variables have yet to be defined (Holmes & Gifford, 1997; Hudleson, 1994). Furthermore, the qualitative approach is well suited to eliciting detailed, contextual descriptions of the types of stressors employees experience in their working environment (Dewe, 1989).

The use of focus groups represents a major departure from the common methodological approaches used in the previous studies investigating stress and the entire
sporting experience (Cohn, 1990; Gould et al., 1993). Most qualitative studies on sport and stress have used only one method to elicit the data, typically open-ended semi-structured interviews. However, in the present study method triangulation was employed to increase the rigor of the qualitative design (Patton 1989, Gifford 1998). Individual, in-depth interviews and focus group discussions were used to gain detailed insights into players' experiences of work and stress. Each of these methods provides different perspectives. The focus group discussions are noted for their ability to draw on group experiences and facilitate interaction between participants (Hawe, Degeling & Hall, 1991). Conversely, the individual interview has been noted for its ability to focus on more subjective or private experiences and concerns (Bernard 1988).

While focus group discussions and in-depth interviews often provide different perspectives about a given topic, the results of the present study revealed that the views expressed individually and in the groups did not differ significantly. In part, this overlap may be because players shared a core of common experiences and the issues identified in individual interviews were not sensitive enough to prevent disclosure and discussion in a larger group. What the focus groups did highlight was the different ways in which players experienced the same sources of stress while individual interviews provided more in-depth insights into the nature of these experiences. In view of the close similarities in the sources of stress revealed in the interviews and focus groups, the data collected via these two methods will be presented together. This approach to presenting qualitative data is not uncommon and has been adopted in previous research employing interviews and focus groups (Bakopanos & Gifford, 2001; Hawe, King, Noort, Gifford, & Lloyd, 1998; Thompson & Gifford, 2000).
Participants

Thirty-two AFL footballers participated in Study Two. Sixteen players were from a club located in a state where Australian football had been traditionally played. This club is referred to as Club A (refer Table 2). The remaining sixteen were from a club located in a state where Australian Football was not commonly played and other codes of football (i.e., Rugby Union and Rugby League) were considered more popular (Club B).

Table 2

Characteristics of Study Two Sample

<table>
<thead>
<tr>
<th>Number of games played</th>
<th>Club A</th>
<th>Club B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Interviews</td>
<td>FG</td>
</tr>
<tr>
<td></td>
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<td>N=2\textsuperscript{a}</td>
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<tr>
<td>- 0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>- 1-25</td>
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</tr>
<tr>
<td>- 26-50</td>
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</tr>
<tr>
<td>- 51-100</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>- 101-200</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

\textsuperscript{a} and \textsuperscript{b} each focus group consisted of six participants

Of the 32 players taking part in this study, 14 (44\%) had played between 0-25 senior games, 7 (21\%) had played between 26-50 games, five (16\%) had played between 51-100 games and the remaining six (19\%) had played in excess of 101 senior matches. This
sample may appear to be heavily biased towards less experienced players. However data describing the demographic profile of AFL footballers indicates that 59% of players have played less than 51 senior games (Cameron Sinclair, Statistics & Media Department, AFL; personal communication, April 5, 2001).

Participants were selected using the purposeful sampling technique, maximum variation sampling (Patton, 1990). This sampling technique was appropriate because the goal of the study was to uncover and describe the full range of stressors experienced by AFL footballers. Prior discussions with the AFL Players’ Association (Andrew Demetriou, personal communication, August 24, 1999) indicated that there would be a core of stressors that would be experienced by players from all clubs. However, the Players’ Association also believed that some stressors would vary between clubs. One factor that was thought to strongly influence inter-club differences was the geographical location of the team. Players who belonged to a club that was situated in a non-Australian football state, where the majority of team members had been relocated from other states, would have different accommodation and general living experiences to players at a club situated in a non-Australian Football state. Teams that are located in states where Australian football has been traditionally played (i.e., Victoria, South Australia and Western Australia) tend to recruit players from within the state. Generally, these players do not need to be relocated long distances and thus they are not required to make dramatic changes in their accommodation, education and general living arrangements. Furthermore, such players are often in close proximity to their close family and friends and have immediate access to long-term social support networks. In contrast, the vast majority of players who are recruited by clubs located in non-traditional football states
(i.e., New South Wales and Queensland) are required to move inter-state, find a suitable place to live, transfer university courses or find new part-time employment and become accustomed to a largely unfamiliar city. To capture these diverse relocation and living experiences, this study will include one club from a traditional Australian football state and another from a non-Australian football state. The aim of selecting these two clubs is not to make comparisons between them, but rather to increase the likelihood that the sample reflects the full range of stressful conditions experienced by AFL footballers.

Another variable that was expected to influence the range of stressors experienced by AFL footballers was the number of senior games played. Research involving AFL recruits indicates that factors associated with their lack of playing experience, such as adjusting to the increased intensity and duration of training, was a source of strain for participants (Hanks, 2000). Based on these findings, the present study included players who are both experienced and inexperienced (as measured by the number of senior games played).

Eight in-depth interviews and four focus groups (each group consisting of six players) were conducted to gain a detailed insight into the sources of stress experienced by participants. The number of sampling units represented in this study was based on purposeful and theoretical sampling techniques (Patton, 1990; Strauss & Corbin, 1990). The individual clubs and players who took part in the study were selected according to the relocation and playing experience criteria already discussed. These criteria were designed to maximise the range of experiences represented in the study (i.e., purposeful sampling) (Patton, 1990). Once the data collection had begun, theoretical sampling was employed to ensure that the evolving theory was identified and monitored (Sandelowski,
1995; Strauss, 1987). Sampling was terminated when theoretical saturation had been achieved (Strauss & Corbin, 1990).

Four interviews and two focus groups were initially undertaken with players from Club A. The results of the interviews and focus groups were progressively analysed and tentative sources of stress were identified. Frequency data was also collected. By the completion of the second focus group at Club A, a series of preliminary categories of stressors had emerged. Within each category, there were several specific sources of stress that had been repeatedly mentioned by participants. Data was then collected from Club B. After four interviews and one focus group had been undertaken at the second club, most of the stressor categories consisted of 2-4 specific sources of stress that had been identified more than two times. Furthermore, there were particular situations and conditions that had been cited more than five times and it was clear that these were common sources of stress among the players sampled. Although a small number of new sources of stress were identified in the final focus group, the overall pattern of responses was the same as that recorded in the earlier interviews and focus groups. At this point there were sufficient theoretical insights to construct a job-specific self-report scale that accurately represented the stressors commonly experienced by AFL footballers and sampling was terminated. A complete description of the methods used to analyse the verbatim transcripts, including inter-coder reliability checks, can be found in Chapter 4: Results.
Procedure

The criterion for selecting players within each club (i.e., number of games played) was given to the manager of the football department. This person was then asked to identify players who met this criterion. Players selected to take part in the study were sent an invitation outlining the objectives of the study, the nature of the interview questions, how the information would be used and steps taken to protect confidentiality. All players contacted agreed to take part in the study.

The in-depth interviews and focus groups followed the same semi-structured format (Gifford, 1998a; Hudleson, 1994; Strauss & Corbin, 1990). With the individual’s consent, these were recorded on audiotape and later transcribed. Each interview and focus group began with an introductory section that provided an overview of the study, described the types of questions that would be posed and elicited background demographic information. The questions on the sources of stress were prefaced by definitions of the terms “stress” and “stressors”. Stress was defined as “times when you feel angry, excessively worried, upset or depressed. These feelings may be accompanied by self-doubt and generally negative thoughts about yourself and others” (Cohn, 1990). The term stressor was defined as any aspect of the person's football and non-football experiences that contribute to stress. These aspects can include training, team meetings, recruitment, induction, player appraisals, contract negotiations, interactions with sponsors, supporters and media, part-time work and study commitments and, family and relationship responsibilities.

Participants were then asked to identify the sources of stress they experience in their job as an AFL footballer. The specific question posed to participants was, “as a
footballer, what situations, events or issues cause you to become stressed?" A series of general probes were used to encourage players to reflect broadly on their experiences. For example, probes were directed towards eliciting information relating to factors outside the football club, such as study or relationship commitments, that might contribute to stress. Players were also asked to consider all stages of the football calendar and not to focus solely on their most recent experiences. Finally, specific elaboration probes were used to ensure players provided detailed, unambiguous descriptions of the source of stress identified (Bernard, 1988; Hudleson, 1994). Each interview lasted between 30-70 minutes while the focus groups lasted between 60-75 minutes.

The questions asked in the interviews and focus groups were first pilot tested with players from an AFL club that was not involved in the main study. The piloting process did not result in major changes to the key question or the types of probes used. However, the pilot tests did provide the opportunity to clarify unfamiliar terms (e.g., delistment), tasks (e.g., promotional obligations) and systems (e.g., induction programs) and establish a balance between formality and informality that was more appropriate to AFL footballers (McCracken, 1988).

Study Three: A Survey of Professional Australian Footballers

The results of Study Two will be used to develop a sources of stress scale that is specific to professional Australian footballers. This scale will be included in a third study that is aimed at assessing the capacity of the augmented JSM to predict the strain experienced
by AFL footballers. Testing the augmented model on a second occupational group has been designed to provide a clearer understanding of the relevance and versatility of the augmented JSM. Furthermore, the selection of a second occupational group that is vastly different from first, is expected to maximise opportunities for identifying job-specific stressors and measuring the extent that these vary between occupations.

**Participants and Procedure**

The sample consisted of professional Australian footballers that were registered to play in the AFL during 2000. All registered players were invited to take part in this study. Questionnaires were handed directly to players via meetings arranged with each club. These meetings had the support of the AFL Players’ Association and the individual clubs. During the meetings the rationale for undertaking the study was explained. Players were requested to complete their questionnaires and mail them directly to the researcher in a stamped, self-addressed envelope. After two weeks, player representatives (who were registered players themselves) reminded players to complete and return their questionnaires as soon as possible. Replacement questionnaires were provided for those players who had lost or misplaced their original copy.

Out of the 736 players invited to take part in this study, 255 (35 percent) completed and returned their questionnaires. Over 65 percent of study participants were aged between 18 and 24 years with only nine percent being older than 29 years of age. The number of senior games played by respondents varied from zero to in excess of 200, with almost half of the sample playing 25 games or less. The demographic breakdown of study participants closely resembles the profile of all AFL footballers (Cameron Sinclair, Statistics & Media Department, AFL; personal communication, April 5, 2001). Statistics
provided by the AFL indicate that 70% of players are aged between 18-24 years, with only 8.5% being 29 years or older. In terms of playing experience, 47% of all AFL footballers have played less than 25 senior games. The high degree of consistency between survey respondents and all AFL footballers indicates that the study sample is, in terms of age and playing experience, representative of professional Australian footballers.

Measures

The dependent and independent variables that were measured in this study were largely the same as those included in Study One. The only exceptions were the job-specific stressors scale and the background demographic questions.

Health

The GHQ-12 (Goldberg & Williams, 1988) was used to measure self-perceived health. Higher scores indicated higher levels of perceived health. The scale had a Cronbach's alpha of 0.78.

Job satisfaction

Job satisfaction was measured using a 15-item scale developed by Warr et al. (1979). Minor changes were made to the terms used in the scale to ensure it reflected the language used in professional football environments. For example, ‘organisation’ was changed to ‘club’, and ‘work colleagues’ to ‘team-mates’. Participants were asked to respond on a seven-point scale ranging from ‘very satisfied’ to ‘very dissatisfied’ (i.e., the higher the score, the higher the dissatisfaction). The scale had a Cronbach’s alpha of 0.87.
Control

Participant perceptions of the amount of control experienced at work were measured using the 22-item scale developed by Dwyer and Ganster (1991). All 22 items were used with only minor changes being made to reflect the language typically used in the football environment. The scale had a Cronbach’s alpha of 0.80.

Job demand

The Quantitative Workload scale (Caplan et al., 1980) was used to measure job demands. The scale had a Cronbach’s alpha of 0.68.

Social support

Support in work and non-work life were measured separately using the 20-item scale developed by Etzion (1984). Participants recorded their responses on a seven-point scale ranging from ‘very much’ to ‘very little’. The Cronbach’s alpha for the work and non-work sub-scales were 0.81 and 0.73 respectively.

Job-specific stressors

Participants were asked to respond to a 25-item, football-specific scale that required them to indicate the extent that each of the factors listed was a source of stress in their job as a footballer. A five-point scale ranging from ‘not at all’ to ‘major source of stress’ was provided. The football-specific stressors scale was based on the results of Study Two. The results of the interviews and focus groups revealed 77 separate sources of stress that were experienced by players. Rather than include all 77 items in the football-specific stressors scale, only 25 of the most frequently cited stressors were listed on the scale. The 25 were determined by counting the number of times each source of stress was cited in
the transcripts. Generally, the top one or two sources of stress from each of the categories of stressors identified in Study Two were included in the scale. A listing of the football-specific stressors measured in the present study can be found in Appendix D (Study Three questionnaire).

The demographic variables, age and number of senior games played were given the following scales. Age was divided into five, roughly equal ranges spanning from 18 to 33 years of age and over. The first range, 18-20 years of age was given a code of one; the second range, 21-24 years was given a code of two; the third range, 25-28 years was given a code of three; the fourth range, 29-32 years was given a code of four; and the fifth range, 33 years or over was given a code of five. Similarly the number of senior games played variable was divided into six ranges that spanned from 0 to 300 games and over. The first category was zero senior games and this was given a code of one. The second category, 1-10 games was given a code of two; 11-25 games a code of three; 26-50 games a code of four; 51-100 a code of five; 101-150 a code of six; 151-200 a code of seven, and; the final category, 201 senior games or more, was given a code of eight. Marital status was coded one for married, two for being involved in a long-term relationship and three for single. The final variable, name of current club, was categorical.

In summary, this chapter has described the research methods that will be used to assess the ability of the augmented JSM to explain the strain experienced by managers and professional Australian footballers. Three studies have been designed to undertake this investigation. In Study One, managers will be surveyed to assess the capacity of the augmented JSM to predict the strain experienced by a conventional occupational group.
The findings from Study One will then be compared with the results of a survey involving professional Australian footballers (Study Three). Professional Australian football is a much more specialised and less conventional occupational group that is poorly represented in the occupational stress literature. To overcome the lack of information on the nature and meaning behind the stressors commonly experienced by this occupational group, the job-specific stressors measured in the second survey will be based on a qualitative study (Study Two). The breadth and depth of information gained from Study Two will serve two purposes. Firstly, the range of stressors that are commonly experienced by professional footballers will inform the development of the job-specific stressors scale used in the survey. Secondly, the contextual information surrounding these stressors will help gauge the extent that the sources of stress experienced by professional footballers are linked to the structural and social characteristics that are important in this occupation.
CHAPTER 4: RESULTS

Study One: A Survey of Managers

The results of Study One have been divided into two sections. The first section includes a descriptive analysis of the job-specific stressors that were identified by respondents as causing the most stress. The second section reports on the results of bivariate and multivariate analyses aimed at assessing the capacity of the JSM and job-specific stressors to predict the strain experienced by managerial personnel. All statistical analyses were undertaken using SPSS 8.0 for Windows (SPSS, 1998).

Pre-Analysis Screening

The data from Study One was screened and assumptions tested using the checklist developed by Tabachnick and Fidell (1996). Initially this process aimed to identify entry errors and missing values. After out-of-range values had been rectified, all means and standard deviations appeared to be plausible. There were no patterns identified in the missing data and overlooked/ignored items were randomly dispersed among variables. Missing data was treated using listwise deletion (Roth, 1994).

Univariate outliers were detected by examining residuals and casewise plots. Cases with standardised scores in excess of +3 or -3 were considered potential outliers. Using this threshold, thirteen potential outliers were identified across the 10 independent variables. Potential multivariate outliers were identified by calculating the Mahalanobis distance for each case. Any case with a Mahalanobis distance greater than
Individual examination of each of the univariate outliers found that six of these cases were deemed to be invalid, based on their apparent haphazard completion, and were removed from further analyses. The remaining seven outliers were classified as extreme cases that were not unrepresentative of the studied population. These cases were subsequently retained.

The assumption of normality for the dependent variables was assessed using the expected normal probability plots. There were minor deviations from normality, however these were not extended shifts that followed a consistent pattern. Scatterplots were also examined to ensure the residuals conformed to assumptions of normality, linearity and homoscedasticity. No major violations of these assumptions were detected. Furthermore, collinearity statistics revealed that none of the variables exceeded the collinearity threshold (Tabachnick & Fiddell, 1996).

**Identifying the Job-Specific Stressors**

Only the four most commonly acknowledged sources of stress were used in the multiple regression analyses. The selection of the most common managerial stressors was designed to ensure that the augmented model was applicable to as many of the participants as possible. This broad applicability then gave the job-specific stressors the best possible chance of being predictive of the target variables. The four job-specific stressors were identified by taking those stressors that were rated by at least 20 percent of respondents as being 'large' or 'major' sources of stress. These stressors and the percentage of respondents who rated them as large or major sources of stress were:
difficulty balancing work and non-work commitments, 34 percent; length of working week, 26 percent; lack of resources to accomplish tasks, 22 percent, and; constant pressure to perform to a high standard, 20 percent. There was a five percent difference between these stressors and the next most frequently identified stressor and, as a consequence of their low frequency rates, the remaining job-specific stressors were not included in the multiple regression analysis.

The Relative Influence of the JSM and Job-Specific Stressors

The descriptive statistics and correlations for Study One are shown in Table 3. This table indicates that there are a substantial number of significant correlations among the independent variables and between the independent and the dependent variables. All the components of the JSM and the job-specific stressors were correlated with psychological health. Similarly, job control, support from non-work sources (i.e., components of JSM) and a lack of resources to accomplish tasks (i.e., job-specific stressor) were significantly correlated with job dissatisfaction. Also of note are the many significant correlations between the JSM variables and the job-specific stressors. From these correlations alone it is not possible to determine the relative importance of the generic and job-specific stressors. Multiple regression was therefore used to clarify the predictive capacity of the JSM and the job-specific stressors.

A two step hierarchical regression was performed for each of the target variables, psychological health and job dissatisfaction. The global stressors, job demand and job control, along with work and non-work support were entered in the first block so as to ascertain their main effects on the independent variables. Table 4 presents the results of this regression for each of the target variables.
Initially, the interactive term job demand x job control x social support (work) was added to the regression analysis, after the individual components of the JSM had been entered (Dwyer & Ganster, 1991). However multiplicative term was later omitted due to the high level of multicollinearity it created (Hair, Anderson, Tatham, & Black, 1998). This term was also found to contribute little to the overall predictive capacity of the model and it was not a significant predictor of either psychological health or job dissatisfaction.

The results of the multiple regression analyses indicate that the support from work sources and job control were significant predictors of both psychological health and job dissatisfaction. In terms of job specific stressors, a lack of resources to accomplish tasks was predictive of job dissatisfaction. Swapping the order of the blocks of predictor variables achieved the same results.

The overall equation shown in Table 4 significantly explains the variance in worker dissatisfaction, $R_{adj}^2 = 0.613$, $F(8,157) = 33.61$, $p<0.001$. The same equation also proved significant for the outcome measure psychological health with $R_{adj}^2 = 0.293$, $F(8,159) = 9.64$, $p<0.001$. However when looking at the total amount of variance that is explained by the predictor variables ($R_{adj}^2$), the combined influence of job demand, job control and social support contributed 98 per cent of the explained variance in job satisfaction and 90 per cent of the explained variance in psychological health.

Furthermore, the contribution made by the job-specific variables reached a significant level ($p<0.05$) for psychological health only. The proportion of explained variance in job satisfaction that was attributed to the job-specific variables was not significant.
Table 3
Descriptive Statistics and Correlations Among Study Variables for Managers

| Variable                                | Mean  | S.D  | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    |
|-----------------------------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| 1. Psychological health                | 20.69 | 4.72 | --   |      |      |      |      |      |      |      |      |      |
| 2. Job dissatisfaction                 | 45.97 | 12.93| -0.42** | --  |      |      |      |      |      |      |      |      |
| 3. Job demand                          | 43.43 | 6.03 | -0.31** | 0.08  | --  |      |      |      |      |      |      |      |
| 4. Job control                         | 75.25 | 12.55| 0.36** | -0.65** | -0.19** | --  |      |      |      |      |      |      |
| 5. Support – non-work                  | 47.90 | 10.94| 0.24** | -0.22** | 0.04  | 0.22** | --  |      |      |      |      |      |
| 6. Support – work                      | 42.86 | 9.75 | 0.42** | -0.71** | -0.16* | 0.53** | 0.41** | --  |      |      |      |      |
| 7. Difficulty balancing work & non-work| 3.13  | 1.18 | -0.35** | 0.04  | 0.41** | -0.19** | -0.14* | -0.16* | --  |      |      |      |
| 8. Length of working week              | 2.87  | 1.27 | -0.33** | 0.09  | 0.56** | -0.15* | -0.13 | -0.19** | 0.58** | --  |      |      |
| 9. Lack of resources to accomplish tasks| 2.57  | 1.19 | -0.26** | 0.27** | 0.31** | -0.25** | -0.11 | -0.26** | 0.33** | 0.33** | --  |      |
| 10. Const. pressure to perform to a high standard | 2.67  | 1.09 | -0.37** | 0.09  | 0.31** | -0.13 | -0.22** | -0.18* | 0.47** | 0.62** | 0.31** |      |

Note: * p < .05, ** p < .01
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<th>(Block) Predictor</th>
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<th>Job dissatisfaction</th>
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<td></td>
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<td>SE</td>
<td>β</td>
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<tr>
<td>(2) Const. pressure to perform to a high standard</td>
<td>-0.65</td>
<td>0.39</td>
<td>-0.15</td>
<td>-9.55</td>
</tr>
<tr>
<td>Constant</td>
<td>17.85</td>
<td>3.42</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: * p < .05, ** p < .01, *** p < .001
A combination of thematic and content analysis methods were used to analyse the interview and focus group transcripts (Gifford, 1998b; Patton, 1990). Data analysis was undertaken concurrently with data collection to ensure that the evolving theory was closely monitored (Strauss & Corbin, 1990). The analysis began by examining the verbatim transcriptions and identifying quotes that represent a single, recognisable aspect of the participant’s experience (Scanlan et al. 1991). Through inductive content analysis, the quotes were categorised into ‘sources’; an abbreviated summary of the quote. In-turn, sources that related to a common topic were classified into a higher-order group called ‘categories’. Finally, the categories were examined and those that related to similar themes were grouped together and given the title ‘themes’. Although the categories and themes emerged from the data themselves, their construction was influenced by the terminology used in the Scanlan et al. (1991) study and the broader occupational stress literature (Cooper & Marshall, 1976; Cox & Cox, 1993). This further enhances the rigor of analysis through what is commonly referred to as theoretical triangulation (Gifford, 1998b; Patton, 1990).

The reliability and validity of the data analysis and interpretation were assessed using three techniques. Firstly, to ensure that the criteria for classifying the data at the different levels was applied consistently, an independent reviewer classified randomly selected sources into categories and, in turn, randomly selected categories into themes (Kirk & Miller, 1986; Miles & Huberman, 1994). Where large inconsistencies were found...
between the researcher and the independent reviewer, the data was to be re-analysed. There was a 12% variation between the researcher and the reviewer and, hence, a re-analysis was not necessary. Secondly, the confirmability of the data analysis and interpretation was checked using member validation (Mays & Pope, 2000). The final analysis and summary of major findings was presented to 12 player delegates from the AFL Players’ Association. Each player represented a different club and they judged the common sources of stress and the overall analysis to be consistent with their perceptions and experiences of occupational stress. Thirdly, the external validity of the findings was assessed further by comparing the results with similar studies involving elite athletes (e.g., Gould et al., 1993; Scanlan et al., 1991). There were many parallels with these studies (refer introduction to Study Three results), and combined with the member validation results, indicates that the findings of Study Two have sound external validity.

The analysis of the interview and focus group transcripts identified 77 different sources of stress. The sources were then grouped into 16 categories of stressors. In-turn, the categories were grouped into 6 themes. The six themes were: (1) negative aspects of organisational systems and culture, (2) worries about performance expectations and standards, (3) career development concerns, (4) demanding nature of work itself, (5) negative aspects of interpersonal relationships, and (6) problems associated with the work/non-work interface. A complete listing of the themes, categories of stressors and sources of stress that were identified in the analysis can be found in Figure 5.
<table>
<thead>
<tr>
<th>Theme</th>
<th>Category of Stressors</th>
<th>Source of Stress and Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Negative aspects of organisational systems and culture</td>
<td>Poor communication</td>
<td>lack of feedback x5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>being ignored if you’re playing poorly x3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>being told what you want to hear x2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>focus on negative feedback x2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>finding out through the media that you’ve been dropped x2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>false promises x1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>not knowing what you’ve done wrong x1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>not listening to concerns x1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>being ignored if injured x1</td>
</tr>
<tr>
<td></td>
<td>Low participation in decision making</td>
<td>autocratic leadership x5</td>
</tr>
<tr>
<td></td>
<td>Negative cultural norms</td>
<td>fickle environment x3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>pressure to conform to club image x3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>better players get preferential treatment x2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>fear of being seen as weak x2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>conservative leadership styles x1</td>
</tr>
</tbody>
</table>
Figure 5. Themes, Categories and Sources of Stress Experienced by a Sample of AFL Footballers (Cont.).
<table>
<thead>
<tr>
<th>Theme</th>
<th>Category of Stressors</th>
<th>Source of Stress and Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative aspects of relationships with coaching staff</td>
<td>abusive criticism from coach x6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>coach difficult to approach x5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lack of support when playing poorly x2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>interpersonal conflict with coach x1</td>
</tr>
<tr>
<td></td>
<td>Negative aspects of relationships with support staff</td>
<td>unfair treatment from fitness staff x1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>arrogant fitness staff x1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>people talking about you behind your back x1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>not trusting psychologist x1</td>
</tr>
<tr>
<td>4. Negative aspects of interpersonal relationships</td>
<td></td>
<td>not feeling a part of the group x7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>intimidated by older players x3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lack of trust x3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>other players not pulling their weight x2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>spending too much time with other players x2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>being ignored by older players x1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>conflict with other players x1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>cliques between players x1</td>
</tr>
<tr>
<td></td>
<td>Negative aspects of relationships with other players</td>
<td>constant public scrutiny x5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>dealing with abusive supporters x3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>undue criticism from media x2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>criticism from sponsors/supporters x2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lack of understanding of commitment required x1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>always having to be nice to supporters x1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>rumours about personal life x1</td>
</tr>
</tbody>
</table>

Figure 5. Themes, Categories and Sources of Stress Experienced by a Sample of AFL Footballers (Cont.).
<table>
<thead>
<tr>
<th>Theme</th>
<th>Category of Stressors</th>
<th>Source of Stress and Frequency</th>
</tr>
</thead>
</table>
| 5. Demanding nature of work itself | Job content concerns | long training sessions x6  
regimented lifestyle x4  
lack of training variety x3  
inflexible work hours x3  
demanding off-field obligations x3  
representing the club all the time x2  
lack of opportunities to play senior football x2  
excessive endurance training x1  
hot training conditions x1  
facing the league’s disciplinary tribunal x1 |
| | Injuries | feeling left out when injured x4  
the injury itself x3  
threat of injury x2  
feeling like you’re falling behind in fitness x2  
injury set-backs x1 |
| 6. Problems associated with the work/non-work interface | Relocation concerns | accommodation problems x5  
missing family and friends x4  
adjusting to independent living x3  
adapting to city life x1 |
| | Work/non-work conflict | difficulty balancing work and other job or study x11  
conflicting demands of work and personal relationships x4 |

Figure 5. Themes, Categories and Sources of Stress Experienced by a Sample of AFL Footballers (Cont.).
Figure 5 also includes the number of times that each source was cited in the transcripts. The more frequently identified sources of stress will be used to develop a self-report scale that will be used in Study Three. With this purpose in mind, only the commonly cited sources of stress are elaborated on in the following section. In many cases, quotes are provided from the transcripts to illustrate what is meant by each of the more frequent sources of stress. The code that follows each quote refers to the point in the transcripts where the quote was obtained. The first letter refers to the club (A or B) while the second letter denotes whether the data collection method was an interview (I) or a focus group (F). Similarly, the first digit refers to the number of the interview or focus group, while the last two digits indicate the transcript page number.

**Theme 1: Negative Aspects of Organisational Structure and Culture.**

This theme refers to aspects of the organisational and cultural environments that were perceived by participants as being stressful. The categories of stressors identified in this theme were (a) poor communication, (b) low participation in decision making, and (c) negative cultural norms.

In terms of poor communication, the majority of concerns related to systemic rather than one-to-one communication problems. The systemic communication problem that was cited the most frequently was a ‘lack of feedback’. A lack of feedback, in this context, refers to inadequate information regarding how participants were performing overall as well as periods when players felt that they didn’t get enough specific feedback. An example of a lack of overall feedback is reflected in the following comment:
… sometimes they (coaching staff) just, are not real good at giving you a heap of feedback – that you really want. Like they really know what you want to hear, but a lot of the time you may not talk to the coaching staff for a long period of time and you really don’t know how you should be going. (BI14)

This source of stress is closely related to another common systemic communication problem, ‘being ignored if you’re playing poorly’. A comment that captured participants’ feelings about this stressor was as follows:

At this club … the coaching staff don’t talk to you at all if you are going through a bad patch. Even if they just said hello to you … it is simple as that. It happened to me a couple of years ago. All they had to do was say, “gidday (player), how are you going?” Simple as that. (BF17)

Another category of stressors within this theme was low participation in decision making. Several participants indicated that ‘autocratic leadership’ was a source of stress, with one player using the analogy of the teacher-pupil relationship to describe the authoritarian management practices adopted by some coaching staff:

… the best way to equate it is, you are treated like school children. You are grown men and you are making good money, and yet you are so vulnerable to what one or two people might say …. And then, you don’t want to be here when you are getting told what to do, and you just want to tune out. You are unhappy with what may be a dictatorship which exists. (BI24)

In the third category of stressors, negative cultural norms, the most frequently cited source of stress was ‘fickle environment’. According to one participant, “… people in
this industry are very fickle; one week they can love you, the next week they can be calling you a fucking prick. They are the things that really get to you” (AI44).

**Theme 2: Worries About Performance Expectations and Standards**

The second theme to emerge from the transcripts refers to worries or concerns participants had regarding the standard of competitive performance they were expected to achieve and whether they could meet those standards. The theme consisted of three categories of stressors: (a) negative aspects of performance expectations, (b) negative aspects of actual performance, and (c) performance uncertainty.

The most common source of stress that was identified in the first category, negative aspects of performance expectations, was a ‘constant pressure to perform’. The importance of performance in AFL football and the pressure this creates is reflected in the following comment, “… performance is critical – in everything. The club is looking to you to play every game that year and play well and if you don’t play well, you could be looking at the door” (BI42).

The second category under this theme was negative aspects of actual performance. In this category, ‘poor form’ was a common source of stress. ‘Poor form’ refers to periods when participants were not performing to the standard expected. Like ‘constant pressure to perform’, this stressor reflects the intense competition that exists within and between AFL clubs and the need for players to consistently achieve high levels of performance. The following comment provides a clear illustration of one participant’s understanding of the consequences of not measuring up to the performance standards:

When you’re playing well, it’s like you don’t have anything to worry about. If you’re playing shithouse, you have got everyone worried about it. You are scared to go to
training, you’re scared to attack the ball…and the coach will say something like “that’s why you are playing shithouse at the moment”, or “that’s why you ditched that goal at the weekend” … you go home, and you’re playing shit anyhow, and they say something – you brood on it all night (AF12).

The third category in this theme, performance uncertainty, consisted of three sources of stress. The two most commonly cited were ‘performance ambiguity’ and ‘selection uncertainty’. In the case of ‘performance ambiguity’, players were unsure about how they had been performing. In contrast, ‘selection uncertainty’ referred to instances where participants indicated that they were excessively worried about whether they would be selected to play in the senior team or not.

**Theme 3: Career Development Concerns.**

Career development concerns refers to the worries participants expressed about their employment prospects both during and beyond their football careers. The theme was composed of two categories of stressors. The first category, uncertain football future, related to concerns participants had regarding their future in football. Of the sources of stress identified in this category, ‘job insecurity’ was by far the most common. One player spoke of the difficulties that job insecurity causes interstate players, “I live with a bloke from Western Australia. He’s not signed up – he’s only 20 – and he’s stressing out at the moment. He’s made the big move over and if they don’t sign him up, what has he got” (BF14). ‘Short time-span to prove worth’ referred to the worries a number of participants had regarding the relatively short amount of time they had to prove they had the ability to be a successful AFL footballer. According to one participant, new players only have one to two years to demonstrate they have necessary attributes: “The first year,
they pretty much regard you fairly well. The second year comes along and if everything is not going your way, then the warning bells start to ring” (BF17).

Where the category, uncertain football future, included participants’ concerns regarding their current occupation as a footballer, the second category consisted of sources of stress pertaining to participants’ lives after football. The most commonly cited source in this category was ‘career uncertainty’. A number of participants expressed fear about what they would do after they finished playing AFL football. This fear stemmed from the difficulty these participants had pursuing non-football employment and educational opportunities. According to one participant, the major barrier to footballers having a career outside football was a lack of time, “Football has increasingly become full-time and you don’t get a chance to study or get experience outside of football. And if you do finish football without any job, what do you do? It is huge - it stresses me mentally” (AF21).

**Theme 4: Negative Aspects of Interpersonal Relationships**

Negative aspects of interpersonal relationships refers to concerns or worries participants had regarding their relationships with other people at the club and in the wider football community. The category, negative aspects of relationships with coaching staff, included ‘receiving abusive criticism from the coaching staff’ and ‘finding the coach difficult to approach’. In the case of the first source of stress, this included receiving verbal abuse, sarcastic remarks and angry, unwarranted criticism. In terms of ‘finding the coach difficult to approach’, the following comment provides a detailed insight into what this source of stress meant for one participant:
… other than the real senior players, there is probably not going to be any younger players or even guys who have been here for years that can confidently walk up to the coach and say what they want to say and not worry about it. Most players are pretty intimidated by the coach and are terrified about saying the wrong thing or creating the wrong impression (BF26).

The category, negative aspects of relationships with support staff, included sources of stress relating to unfair treatment from fitness staff and a lack of trust between certain support staff members and participants. In the case of the latter source, the following comment illustrates what this distrust meant for one participant: “We recently had a sports psychologist …. He was dealing with the coaching staff quite a lot and we thought he was getting dictated to by them. You really couldn’t trust him to keep your thoughts private” (AF29).

The third category of stressors in this theme, negative aspects of relationships with other players, consisted of a large number of sources of stress with the most common being ‘not feeling a part of the group’. Younger participants appeared to be much more likely to experience this source of stress: “A lot of guys come down and train and go back home and never really feel a part of it …. I first came down about seven years ago – and I only now really feel a part of it - it is my club - sort of thing. But I really didn’t feel that until I played 60-70 games in the seniors” (AI44).

The most prominent source of stress in the final category in this theme, negative aspects of relationships with supporters, sponsors and the media, was ‘constant public scrutiny’. A number of participants felt that the constant public attention was a source of stress:
The attention you get in your day-to-day life is what I find most stressful. Like – if you just go out to a café to have something to eat, by yourself, or with a couple of friends, people look at you…. I can put up with it most of the time. It is just sometimes, it becomes a bit much (BI31).

Theme 5: Demanding Nature of Work Itself

Where the first theme, ‘organisational structure, systems and culture’, referred to the social and organisational context that professional footballers work in, this theme refers to the very nature of the work itself. That is, the tasks that players are required to undertake (including when injured or fulfilling non-playing, contractual commitments) and the physical conditions in which these tasks are completed. Two categories of stressors were included in this theme, job content concerns and injuries.

Concerns about job content included problems or worries participants had regarding the very nature of their job as a footballer. Two of the most commonly cited sources of stress in this category were ‘long training sessions’ and ‘regimented lifestyle’. The feelings participants had towards ‘long training sessions’ were mixed. While participants recognised this as a stressor, they also saw it as an integral part of being a being an elite footballer; “The only thing that really pisses you off this time of year (pre-season) is probably the volume and intensity of what is required with training. Which is a necessary evil.” (BI21) Another frequently identified source of stress in this category was ‘regimented lifestyle’:

You are owned by the football club for 10 months of the year. And they have access to phone numbers to call on you any time of the day. There’s a certain number of functions you have to attend. There’s a dress code covering which uniforms to wear.
There are times that if you are not here you are fined. It’s just – you’re pretty much at their beck and call. (AF19)

The second category in this particular theme was injuries. ‘Feeling left out when injured’ and ‘the injury itself’ appeared to be major sources of stress for participants. In terms of the first source, participants who had undertaken rehabilitation programs by themselves indicated that during these periods they sometimes had difficulty dealing with the sense of isolation and lack of involvement with the rest of the team.

Theme 6: Problems Associated with the Work/Non-Work Interface.

This final theme refers to problems or concerns that stemmed from the interface between participants’ football and non-football lives. The first category, relocation concerns, included problems associated with finding suitable accommodation, missing family and friends and adjusting to independent living. ‘Accommodation problems’ appeared to be more of a concern for participants who had just moved from another state: “When I first came over I was moved about 5 times – that was a real worry” (BF12). According to another interstate player, leaving family and friends was difficult at first, however this only lasted the “first few weeks, maybe a month” (BF12).

The work/non-work conflict category consisted of two sources of stress: ‘difficulty balancing work (football) and other job or study commitments’ and ‘conflicting demands of work and personal relationships’. A major barrier to achieving a better balance between football and non-football pursuits appeared to be timing. One participant explained: “It’s not so much the workload, it’s the hours you do. The hours that you have for football don’t coincide with a 9-5 job” (AF21). According to another participant, combining two jobs – football and another job – can be very taxing:
Just having too much on your plate can be stressful. Working during the day and coming to training and being expected to perform at a high level after being pressured during the day. You are very fragile at that stage (AF22).

Overall, the analysis of the interviews and focus groups undertaken in Study Two revealed 77 separate sources of stress that were experienced by participants. These stressors covered a wide range of work characteristics, including poor on-field performances (referred to as ‘poor form’), constant pressure to perform to a high standard, job insecurity, long training sessions, lack of feedback, constant public scrutiny and difficulty balancing football and other job/study commitments. The sources of stress identified in Study Two will be used to construct a self-report scale designed to identify the job-specific stressors experienced by professional Australian footballers. However, before developing this scale it is first necessary to undertake further assessments of the accuracy of the data.

Study Three: A Survey of AFL Footballers

The reliability of the data generated in Study Two is reflected in the high level of internal and external consistency identified (Neuman, 1994). Many of the stressors cited in the transcripts were expressed by more than one player and in more than one interview or focus group. However the consistency between respondents does not eliminate the possibility that there was a response effect or that misinformation and lies were captured in the data collected in Study Two (Sim & Wright, 2000). On the basis of this uncertainty
it is important to check external validity by comparing the data with other stress in sport studies.

The results of Study Two share many similarities with previous stress in sport studies. For example, a number of the sources of stress identified by professional footballers were very similar to those identified by non-professional athletes including elite figure skaters and high-school golfers. These stressors included: worry about performing poorly (Gould et al. 1993; Scanlan et al. 1991); receiving criticism from coach; balancing skating and work/school; having reduced social life due to training demands (Scanlan et al. 1991); having to be good consistently; fear of failure; partiality by coaching staff; too much media attention (Gould et al. 1993) and; injuries (Cohn, 1990; Gould et al. 1993).

Numerous stressors are also consistent with those identified in other studies involving professional athletes, including Australian footballers. For example, poor on-field performances were found to lead to feelings of failure, lowered self-image and problems with interpersonal relationships among a group of professional male athletes (Messner, 1992). Similarly, missing family and friends and accommodation problems were identified in a qualitative study involving AFL draftees (Hanks, 2000). The many parallels between the results of Study Two and previous research, combined with the high degree of member validation (refer introduction to Study Two results), reinforces the external validity of the findings. This level of validity enhances the likelihood that the stressors identified in Study Two are an accurate representation of the sources of stress commonly experienced by professional Australian footballers.

The results of Study Two were used to develop a sources of stress scale that was specific to professional Australian footballers. However, rather than incorporate all 77
items in the football-specific stressors scale, only 25 of the most frequently cited stressors were included (refer Appendix D, Study Three Questionnaire, for a complete listing of these 25 stressors). The most frequently cited stressors from Study Two, along with components of the JSM, were then included in a third study that was aimed at assessing the capacity of the augmented JSM to predict the strain experienced by AFL footballers. The following section describes the results of Study Three.

The statistical analyses undertaken Study Three followed the same approach as those analyses conducted in Study One. All statistical analyses were undertaken using SPSS 8.0 for Windows (SPSS, 1998).

**Pre-Analysis Screening**

Prior to undertaking the analysis, the data was screened for entry errors and major violations of assumptions. There were a small number of out-of-range scores and once these had been rectified, all means and standard deviations appeared to be plausible. The missing data was randomly dispersed among variables and this data was treated using listwise deletion (Roth, 1994).

Univariate outliers were detected by examining residuals and casewise plots. Three potential outliers were identified across the eight independent variables. Individual examination of each of the univariate outliers found that two of these were simply extreme cases. The remaining case contained inconsistent, haphazard responses and was filtered out of further analyses. The Mahalanobis distance was used to identify multivariate outliers. Any case with a Mahalanobis distance greater than $X^2(10) = 29.588 (p<.001)$ was considered a multivariate outlier. There were no cases that exceeded this level.
Assumptions of normality, linearity and homoscedasticity were assessed using the expected normal probability plots and scatterplots. Generally the normal probability plots conformed to the assumption of normality. The residuals on the scatterplots were approximately rectangular with a concentration of scores along the centre. No major violations of normality, linearity and homoscedasticity were detected. Finally, all independent variables were examined for multicollinearity. Although one variable had a conditioning index of greater than 30, only one variance proportion exceeded .50, hence no remedial action was necessary (Tabachnick & Fiddell, 1996).

**Identifying the Job-Specific Stressors**

Participants were asked to indicate the extent that the 25 potential sources of stress identified in Study Two were an actual source of stress for them. The results show that there were six stressors that at least 30% of respondents indicated were large or major

Table 5

<table>
<thead>
<tr>
<th>Job-specific source of stress</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor on-field performances</td>
<td>73.2</td>
</tr>
<tr>
<td>Injury</td>
<td>52.4</td>
</tr>
<tr>
<td>Constant pressure to perform to a high standard</td>
<td>37.1</td>
</tr>
<tr>
<td>Possibility of being de-listed</td>
<td>33.3</td>
</tr>
<tr>
<td>Selection uncertainty</td>
<td>32.1</td>
</tr>
<tr>
<td>Post-career uncertainty</td>
<td>30.4</td>
</tr>
</tbody>
</table>

Job-specific sources of stress and the percentage of players who rated them as ‘large’ or ‘major’.
sources of stress. There was a significant gap of four percentile points between the sixth and seventh most frequently identified large and major sources of stress and, hence, only the top six were examined in the bivariate and multivariate analyses.

The purpose of identifying the most common job-specific stressors was to ensure that the selected sources of stress were relevant to as many of the respondents as possible. Selecting those stressors that had the most relevance to the participants would then give these variables the best chance of being predictive of psychological health and job satisfaction. The six job-specific stressors and the percentage of respondents who rated them as large and major sources of stress are listed in Table 5.

The Relative Influence of JSM and Job-Specific Stressors

Correlations were calculated to highlight the pattern of relationships among the independent and dependent variables (refer Table 6). The most prominent feature of this table is the large number of significant correlations between the dependent and independent variables. All the independent variables were correlated with at least one of the outcome variables. Only job demand and injury were not correlated with both job satisfaction and psychological health. Based on these correlations, it appears that both the generic and the job-specific variables are closely linked to job strain. However, it is not possible to determine the relative importance of the generic and job-specific stressors on the basis of these correlations alone. Multiple regression was therefore used to clarify the predictive capacity of job demand, job control, work-based support, non-work support, and six football-specific stressors.
Table 6

Descriptive Statistics and Correlations Among Study Variables for Professional Australian Footballers

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Psychological health</td>
<td>20.18</td>
<td>4.75</td>
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<td></td>
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</tr>
<tr>
<td>2. Job dissatisfaction</td>
<td>45.00</td>
<td>10.37</td>
<td>-0.43**</td>
<td>--</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Job demand</td>
<td>39.72</td>
<td>3.92</td>
<td>-0.12</td>
<td>0.14*</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>4. Job control</td>
<td>57.53</td>
<td>9.53</td>
<td>0.21**</td>
<td>-0.42**</td>
<td>-0.08</td>
<td>--</td>
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</tr>
<tr>
<td>5. Support – non-work</td>
<td>52.46</td>
<td>7.66</td>
<td>0.18**</td>
<td>-0.33**</td>
<td>0.18**</td>
<td>0.19*</td>
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</tr>
<tr>
<td>6. Support – work</td>
<td>53.03</td>
<td>7.76</td>
<td>0.29**</td>
<td>-0.60**</td>
<td>0.04</td>
<td>0.30**</td>
<td>0.47**</td>
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<tr>
<td>7. Poor on-field performances</td>
<td>4.13</td>
<td>1.00</td>
<td>-0.19**</td>
<td>0.19**</td>
<td>0.06</td>
<td>-0.08</td>
<td>-0.21**</td>
<td>-0.14</td>
<td>--</td>
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<tr>
<td>8. Injury</td>
<td>3.34</td>
<td>1.31</td>
<td>-0.24</td>
<td>0.20**</td>
<td>0.11</td>
<td>-0.02</td>
<td>-0.09</td>
<td>-0.10</td>
<td>0.33**</td>
<td>--</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9. Constant pressure to perform</td>
<td>3.23</td>
<td>1.03</td>
<td>-0.34**</td>
<td>0.22**</td>
<td>0.22**</td>
<td>-0.13*</td>
<td>-0.21*</td>
<td>-0.09</td>
<td>0.40**</td>
<td>0.33**</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>10. Possibility of delistment</td>
<td>2.98</td>
<td>1.35</td>
<td>-0.22**</td>
<td>0.24**</td>
<td>-0.30</td>
<td>-0.10</td>
<td>-0.14*</td>
<td>-0.11</td>
<td>0.27**</td>
<td>0.24**</td>
<td>0.17**</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>11. Selection uncertainty</td>
<td>2.83</td>
<td>1.26</td>
<td>-0.19**</td>
<td>0.32**</td>
<td>0.04</td>
<td>-0.05</td>
<td>-0.33**</td>
<td>-0.19**</td>
<td>0.29**</td>
<td>0.36**</td>
<td>0.23**</td>
<td>0.47**</td>
<td>--</td>
</tr>
<tr>
<td>12. Post-football uncertainty</td>
<td>2.79</td>
<td>1.28</td>
<td>-0.23**</td>
<td>0.16*</td>
<td>0.04</td>
<td>0.06</td>
<td>-0.02</td>
<td>-0.03</td>
<td>0.08</td>
<td>0.08</td>
<td>0.16*</td>
<td>0.20**</td>
<td>0.16*</td>
</tr>
</tbody>
</table>

*Note: * = p<0.05; ** = p < 0.01
Table 7

Hierarchical Multiple Regression Analyses of Psychological Health and Job Dissatisfaction for Professional Australian Footballers

<table>
<thead>
<tr>
<th>(Block) Predictor</th>
<th>Psychological health</th>
<th>Job dissatisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE</td>
</tr>
<tr>
<td>(1) Job demand</td>
<td>-6.55</td>
<td>0.08</td>
</tr>
<tr>
<td>(1) Job control</td>
<td>6.09</td>
<td>0.03</td>
</tr>
<tr>
<td>(1) Support – non-work</td>
<td>-1.27</td>
<td>0.05</td>
</tr>
<tr>
<td>(1) Support - work</td>
<td>0.12</td>
<td>0.05</td>
</tr>
<tr>
<td>(2) Poor on-field performances</td>
<td>5.26</td>
<td>0.39</td>
</tr>
<tr>
<td>(2) Injury</td>
<td>-0.39</td>
<td>0.26</td>
</tr>
<tr>
<td>(2) Const. pressure to perform to a high standard</td>
<td>-0.83</td>
<td>0.35</td>
</tr>
<tr>
<td>(2) Possibility of delistment</td>
<td>-0.41</td>
<td>0.27</td>
</tr>
<tr>
<td>(2) Selection uncertainty</td>
<td>3.35</td>
<td>0.01</td>
</tr>
<tr>
<td>(2) Post-football uncertainty</td>
<td>-0.75</td>
<td>0.26</td>
</tr>
<tr>
<td>Constant</td>
<td>20.40</td>
<td>4.94</td>
</tr>
</tbody>
</table>

Note: * = p < .05; ** = p < .01; *** = p < .001
A two step hierarchical regression was performed for each of the target variables; health and job dissatisfaction. The generic stressors, job demand and job control, along with work and non-work support were entered in the first block so as to ascertain their main effects on the independent variables. In the initial regression, the interactive term job demand x job control x social support (work) was added to the analysis, after the individual terms had been entered (Dwyer & Ganster, 1991). However this term was later omitted due to the high level of multicollinearity it created (Hair et al., 1998). The interactive term was also found to have a negligible influence on the predictive capacity of the model and was not a significant predictor of either outcome variables.

The results of the multiple regression analyses (refer Table 7) indicate that the support from work sources along with the football-specific stressor ‘post-football uncertainty’, were significant predictors of both psychological health and job dissatisfaction. Despite control being a significant predictor of job dissatisfaction it did not have a significant effect on worker health. Similarly, the football-specific stressor, ‘constant pressure to perform to a high standard’, was found to be a significant predictor of psychological health, although there was not a significant relationship between this independent variable and job satisfaction. In terms of the relative contribution of generic and job-specific stressors, the job-specific stressors accounted for an additional 45 percent of the explained variance in psychological health, while the same stressors explained an additional 13 percent of the explained variance in job dissatisfaction.

The overall equation shown in Table 7 significantly explains the variance in psychological health with $R^2_{adj} = 0.244$, $F (10,170) = 5.48$, $p<0.001$. The overall
equation also proved significant for the outcome measure job dissatisfaction, $R^2_{\text{adj}} = 0.502$, $F(10,161) = 16.24$, $p < 0.001$.

The results of studies one and three have important theoretical and practical implications for the augmented JSM. A detailed discussion of these implications will be provided in the following chapter.
CHAPTER 5: DISCUSSION

The major purpose of this chapter is to discuss the extent that the results support or do not support the hypotheses formulated in Chapter 2. These hypotheses were as follows:

**Hypothesis 1.** Both the generic dimensions of the JSM and job-specific stressors will be significant predictors of the strain experienced by managers and professional Australian footballers.

**Hypothesis 2.** The augmented JSM will explain significantly more of the variance in job strain than if the JSM is used alone.

**Hypothesis 3.** There will be both similarities and differences in the job-specific stressors that are predictive of the strain experienced by managers and professional Australian footballers.

**Hypothesis 4.** The variations in the job-specific stressors will be attributed, in a large part, to the important characteristics of each occupation.

**Hypothesis 5.** Both work and non-work sources of social support will be significant predictors of the strain experienced by managers and professional Australian footballers.

Overall, the results of the multiple regression analyses provide strong support for Hypotheses One, Three and Four. Both generic and job-specific stressors were found to be significant predictors of job strain and there were wide variations in the job-specific stressors experienced by managers and professional footballers. Furthermore, these job-specific stressors appeared to be closely linked to the work characteristics that are important in each occupation.
Despite the strong support for these hypotheses, the most revealing insight into the value of the augmented JSM can be seen in the results relating to Hypothesis Two. The results of the regression analyses indicate that there was only moderate support for the augmented model and this support was most evident when examining the work characteristics that explained the psychological health of professional Australian footballers. Hypothesis Five was not supported in either study. Instead, the findings indicated that work-based support was far more influential in the work-strain relationship than non-work support.

The first part of this discussion will consider Studies One and Three separately. Examining the studies individually is designed to provide a stand-alone discussion of each study and highlight the links between the results and previous research involving managers and professional footballers. The results of Studies One and Three will then be compared and key outcomes will be identified. In making these comparisons, emphasis will be given to the cross-occupational performance of the augmented JSM. The results indicate that the augmented JSM provides a more accurate explanation of the strain experienced by the professional footballers than it does for managers. There are two possible explanations for this fluctuating level of relevance. One suggests that the components of the JSM simply coincided with the work characteristics that are an integral part of the work undertaken by managers and, to a lesser extent, professional footballers. Conversely, the second explanation indicates that the JSM is more applicable to conventional occupations like management than it is of highly unconventional jobs like professional sport. The second explanation is in direct contrast with earlier research looking at the relative influence of generic and job-specific stressors. Furthermore, each of these explanations will have dramatically different consequences for stress prevention strategies. A key aim of this section is
therefore to use the results of this and previous research to examine the accuracy of each explanation and identify that which is most plausible.

The inter-occupational comparisons will be followed by a description of the key implications resulting from this study. The first part of the discussion will centre on the implications that the findings will have for occupational stress in general, while the latter part will consider the implications for managers and professional footballers. The limitations of the overall study will then be discussed. Together with the key findings and implications, these limitations will inform the final conclusions resulting from this thesis.

Study One: Examining the Stressors Experienced by Managers

A key aim of Study One was to assess the capacity of an augmented JSM to predict the strain experienced by managers. Generally, the results support the first hypothesis that both generic and job-specific stressors will be predictive of job strain. However, the job-specific stressors added very little to the explanatory capacity of the JSM and, contrary to Hypothesis Two, there was only weak support for the augmented JSM in Study One. Hypothesis Three relates to the inter-occupational variations in job-specific stressors and will be discussed when comparing the results of Studies Two and Three. In terms of Hypothesis Four, the job-specific stressors identified in Study One can be attributed to the work characteristics that are important for managers and, consequently, the results are consistent with this hypothesis. Finally, Hypothesis Five indicated that both work and non-work support would be predictive of the strain experienced by managers. In contrast to this expectation, only support from work sources was a significant predictor of the outcome variables.
Only one job specific stressor was found to predictive of strain in the present study. This was a lack of resources to accomplish tasks. The influence of this stressor is not unexpected and can be seen to reflect the highly competitive environments that many organisations are now operating in. With the deregulation of markets and the emergence of international competitors, organisations in both the private and public sector are continually looking at ways of increasing productivity while reducing resources (Dunford & Bramble, 1998). The need to cut costs and ‘to do more with less’ shows no signs of abating (Burke & Leiter, 2000) and it appears that a lack of resources will continue to be a key source of strain for managers well into the future.

The predictive capacity of the job-specific variable, a lack of resources to accomplish tasks, supports the view that occupational stress investigations should be guided by generic models of job strain that have been augmented by job specific variables (Beehr et al., 2000; Sparks & Cooper, 1999). However, the relatively small proportion of explained variance that is attributed to the job specific stressors (2 per cent for job satisfaction and 10 per cent for psychological health) provides only partial support for the use of an augmented model. The vast majority of the explained variance in job strain was accounted for by the JSM. This result provides a more telling insight into the relative influence of generic and job-specific models and strongly suggests that an augmented model will add little value to an investigation into the strain experienced by managerial staff. Furthermore, the large amount of explained variance attributed to the JSM indicates that job-specific stressors are not as critical as other studies have found (Beehr et al., 2000; Narayanan et al., 1999; Sparks & Cooper, 1999). These studies did not employ the JSM to investigate the relative influence of generic and job-specific stressors and, on this basis, Karasek and
Theorell's (1990) expanded model could be regarded as a more suitable framework for examining the work-strain relationship. This view is consistent with previous studies that have found demand, control and support to be predictive of job strain within single occupational groups as well as between a range of different occupations (Karasek, 1979; Karasek & Theorell, 1990; Payne & Fletcher, 1983).

**The Influence of the JSM**

The results show that the work characteristics described by the JSM explained a significant proportion of the explained strain experienced by managers. Job control and social support from work sources were found to have a particularly significant effect on managerial strain.

The significant relationship between job control and the health outcomes is consistent with previous studies investigating the effect of job control on the stress experienced by managerial staff (Bogg & Cooper, 1995; Cooper & Hensman, 1985). The strong predictive capacity of job control also parallels previous research indicating that a lack of autonomy has become an increasingly significant source of dissatisfaction among managers, particularly middle and lower-level managers (European Foundation for the Improvement of Living and Working Conditions, 1999; Worrall & Cooper, 1999). This growing level of dissatisfaction may be reflective of the trend for organisations to become increasingly more decentralised and to empower ‘shop-floor’ employees with greater decision making responsibilities (Denham et al., 1997; Staehle & Schirmer, 1992). However while middle and lower-level managers, in particular, are required to delegate their decision-making power to subordinates, they are still expected to be accountable for the performance of the work unit (McConville & Holden, 1999). At the same time, managers are also obliged to
implement policies and systems that have been developed largely by CEO’s, directors, and executives. The lack of input into broader policy decisions increases the gap between responsibility and authority and creates even more strain for the manager (McConville & Holden, 1999).

The valuable role played by work-based support was clearly evident in the present study. The predictive capacity of social support parallels other research showing that social support accounted for additional variance over and above job demand and job control (Fletcher & Jones, 1993). However, not all sources of social support were predictive of job strain. Although it was hypothesised that both work and non-work support would be predictive of the strain experienced by managers, only support from work sources was a significant predictor of the health outcomes. This finding adds weight to previous studies indicating that work-based support is central to preventing or reducing occupational stress (Beehr, King, & King, 1990; House, 1981; Leong et al., 1996; Terry et al., 1993). The findings are also consistent with the disaggregated or functional approach to social support (Cutrona, 1990; Sarason et al., 1990) and reinforce the importance of support providers having the qualifications to address the needs activated by the stressor/s (Gottlieb, 1983; Terry et al., 1993). In the case of managers, job stressors such as work overload can only be addressed by people who have the knowledge or the decision-making power to reduce the volume or complexity of work undertaken. Although, family and friends may be able to provide valuable emotional support that helps the individual cope with demanding periods, only senior staff, colleagues and subordinates are capable of arranging or providing the assistance that is needed to actually reduce the workload.

Despite the importance of work-based support for managers, their position on the organisational hierarchy may make them particularly vulnerable to receiving a lack of
support from both superiors and subordinates. The role of managers in an organisation typically places them at the interface between the most senior members of the organisation and ‘shop-floor’ employees (Albrecht, 1979; Denham et al., 1997). In this position, managers face the difficult task of mediating a firm’s policy decisions downward through the hierarchy and making sure that those decisions are instituted on time and in the manner they were intended. However, as the public face of the management team, middle and lower-level managers are often the recipients of criticism and aggravation from employees who do not support the changes. Many managers are therefore responsible for managing the sharpest point of conflict in employment relations (Denham et al., 1997). This conflict can often lead to strained relationships that, in-turn, reduces the level of work-based support that managers receive. Constantly being in the position of “piggy in the middle” (Denham et al., 1997, p. 3), can therefore expose managers to stressful situations where they are at risk of not having the functional support needed to address the source/s of the strain.

In addition to examining the additive effects of demand, control and support, the present study also measured the interactive effects of theses three variables. As other research has found, the three-way multiplicative term contributed little to the predictive capacity of the JSM (Dollard et al., 2000). Although this result reduces the plausibility of the JSM’s interactive mechanism, it does not diminish the importance of the psychosocial conditions represented in the model. The additive effects of demand, control and support in this study indicates that these conditions are still major contributors to the strain experienced by managers.
Summary of Study One

To summarise the results of Study One, the large proportion of explained strain that was accounted for by the JSM indicates that this model captures the key work characteristics that contribute to the strain experienced by managers. Although there was some support for augmenting generic models of job strain with more job-specific models, the predictive capacity of the more situation-specific variables was relatively small. In conclusion, the results of Study One do not support the hypothesis that the augmented JSM will explain significantly more of the strain experienced by managers than if the JSM was used alone. However these results are limited to one occupational group. A more accurate understanding of the predictive capacity of combined generic and job-specific models cannot be achieved without examining the strain experienced by a second occupational group. The results of Study Three will therefore play a critical role in measuring the cross-occupational value of the augmented JSM.

Study Three: Examining the Stressors Experienced by AFL Footballers

Study Three was undertaken to examine the capacity of the augmented JSM to predict the strain experienced by a second occupational group; professional Australian footballers. There were two main reasons for selecting professional Australian footballers as the second occupation examined in this study. It was expected that the large differences between managers and professional Australian footballers, particularly in terms of the work undertaken, would maximise the opportunities for identifying job-specific stressors and measuring the extent that these varied from one occupational group to the next. The large disparity between managers and
professional footballers was also designed to assess the versatility of the JSM when it had been augmented by job-specific stressors.

Like the managers’ study, the results of Study Three support the hypothesis that both the generic components of the JSM and job-specific stressors will be predictive of the strain experienced by this occupational group. This study also found that the job-specific stressors were closely linked to important work characteristics and that work-based support (not non-work support) was predictive of health outcomes. However in contrast to the previous study, the results of Study Three indicate that augmenting the JSM with occupational-specific variables explains significantly more of the job strain than if the generic or job-specific stressors were measured alone. The inconsistent performance of the augmented JSM is a key outcome of the overall study and will be discussed when examining the differences between Studies One and Three. The following sub-section will focus solely on the results of Study Three.

The Influence of Job-Specific Stressors

Consistent with Hypothesis Two, the findings from this study indicate that the job-specific stressors explained a significant portion of the strain experienced by professional Australian footballers. The football-specific stressor that had a significant effect on both health and job satisfaction outcomes was post-football uncertainty. The significance of this stressor is not unexpected and supports the view that job-specific stressors are an extension of the key structures and characteristics that define an occupation (Barley, 1990; Friedson, 1970).

Findings from Study Two indicate that players' concern about their lives after football is directly related to the short-career span of professional footballers and the all-consuming nature of their profession. These views are consistent with contextual
data presented in the literature review. Professional Australian footballers follow an early start-early leaving career pattern (Herr & Cramer, 1996). Although players begin playing AFL football around the same age as most other adults, their professional football careers are generally over by the time most other working adults are just starting to enter their most productive work years. Some of the very successful players may be able to use their public profiles to enter the sports media. However these players are very much in the minority and the vast majority of ex-professional Australian footballers are forced to start new careers in fields that are unrelated to football (Ryan, 1999). This can be extremely difficult given the highly specialised nature of professional sport and the lack of opportunities for developing more transferable skills (Horn, 1997). Furthermore, the chances for gaining the skills required to work in other industries, via education and non-football employment, are limited by the full-time demands of professional sport (Ryan, 1999). In view of these constraints, many players may feel very uncertain about their employment prospects if their football contract was terminated and they were forced to find alternative work.

Another football specific stressor that was found to be closely associated with job satisfaction was the constant pressure to perform to a high standard. This result parallels previous research involving elite figure-skaters where the need to consistently maintain high performance standards was identified as a common source of stress (Gould et al., 1993). The constant pressure to perform is a dominant feature of competitive sport and reflects the steep hierarchical structure on which it is based (Messner, 1992). As the athlete moves up the pyramid of competitive sport, the pressure to succeed increases rapidly. This pressure is greatest at the professional level where athletes are constantly reminded that their position in the team and, in the longer term, their professional contract, is contingent on their most recent
performances (Messner, 1992). The constant pressure to perform was clearly evident in Study Two. According to one player, “… performance is critical – in everything. The club is looking to you to play every game that year and play well and if you don’t play well, you could be looking at the door”. The pressure to perform week-in and week-out forms the basis of the sporting idiom ‘you’re only as good as your last game’ and can often result in players developing a perception of themselves that revolves around their match-day performances (Messner, 1992).

The need to achieve consistently high standards of performance does not emanate solely from club-based sources. In contrast, the enormous popularity of Australian football, particularly in the southern states of Australia, has resulted in the performances of AFL footballers also being heavily scrutinised by people that are situated well outside the football club. Television commentators, sports journalists, club supporters and the general sporting public all have a view on individual and team performances and all are critical of those who do not achieve the standards expected. However, fluctuating levels of performance are an inevitable part of sport and the mounting pressure that is associated with prolonged periods of poor form can often lead to feelings of failure, lowered self-image and problems with interpersonal relationships (Messner, 1992). The constant pressure to perform to high standards is therefore a dominant source of strain for athletes that, in conjunction with a series of poor performances, can have far-reaching health consequences for members of this profession.

The strong links between the work characteristics that define professional Australian football and the job-specific stressors identified in Study Three, suggest that these stressors are also likely to exist in occupations that share similar characteristics. Dancers, models, other professional athletes and the broader
performing arts community all work in professions that perform to an audience and are defined by narrow, highly specialised job descriptions (U.S. Department of Labor, 1977). These job descriptions provide few opportunities for developing knowledge and skills that are relevant in more conventional occupations. In addition, these particular professions are classified as early start-early leaving careers (Herr & Cramer, 1996) where the entry requirements are based more on high levels of natural talent that has been nurtured over many years and less on institutional education and training (Wash, 1995). With these similarities in mind, it is likely that the augmented JSM developed for professional Australian football would also provide an accurate assessment of the work-strain relationship experienced by other members of performing arts industry. This is an important finding given that this industry is poorly represented in the occupational stress literature and little is known about the work characteristics that undermine the health of musicians, singers, dancers and other performing artists (Sternbach, 1995).

The Influence of the JSM

The results of the multiple regression also revealed that components of the JSM were predictive of the strain experienced by AFL footballers. Job control and work support were significant predictors of the dissatisfaction experienced by study participants while social support was predictive of both psychological health and job satisfaction. Furthermore, the substantial portions of explained variance in job strain that were accounted for by the JSM - 45% for psychological health and 87% for job satisfaction - suggest that this model provides an accurate account of the work characteristics that have a strong influence on the strain experienced by professional Australian footballers.
The positive role of work-based support was particularly evident in the present study. Combined with the small amount of variance explained by non-work support, this finding supports previous research indicating that work-based support is central to preventing or reducing occupational stress (Beehr et al., 1990; House, 1981; Terry et al., 1993). The strong influence of work-based support is also consistent with the functional approach to social support whereby the support provided is appropriately matched to the specific needs activated by the stressor (Cutrona, 1990, Sarason et al., 1990). This matching requires the support of people who have the knowledge, ability, or authority to address the needs that the particular stressor/s activate (Gottlieb, 1983, Terry et al., 1993). In view of the elite and highly specialised environment that professional Australian footballers work in, work-based support may be particularly important for this occupational group. Performance feedback, skill development, strategy guidance and general assistance need to be provided by people who are familiar with the unique requirements of an AFL footballer and have the authority to fulfil these support needs. The need for specialised feedback and guidance is consistent with other research involving athletic populations (Rosenfeld, Richman, & Hardy, 1989). Together, these results indicate that while family and friends may be able to provide valuable emotional support, only coaches, team-mates and support staff have the capacity to cater for the more specific and very functional support needs of players.

The relationship between job control and job satisfaction among AFL footballers parallels previous studies involving other occupational groups (Fox et al., 1993; Hurrell & McLaney, 1989). In view of the lack of research examining the influence of job control on athletic populations, the results concerning job control are particularly revealing. It has been acknowledged that decision-making mechanisms in sporting
teams are highly centralised (Sabo & Panepinto, 1990) and that the level of control held by players is based on their respective position on the social hierarchy (Harvey, 1999). Likewise, Study Two indicated that autocratic leadership was a source of stress for some participants with one player using the analogy of the teacher-pupil relationship to describe the authoritarian practices adopted by coaching staff. However, there is a dearth of information on the effects of job control on the health of athletes. This study has found that job control was predictive of job satisfaction among participants. This result, together with previous studies examining the benefits of participatory decision making (Carayon, 1995; Jackson, 1983), suggest that the strain experienced by athletes could be reduced by improvements in job control.

Despite the strong support for the additive effects of social support, and to a lesser extent job control, the results of Study Three did not support the interactive term. The lack of support for the interactive effects of the JSM is consistent with previous findings (Dollard et al., 2000). Together with the weak association between job demands and job strain, these findings indicate that work-based social support and job control need to be a primary focus when formulating stress reduction strategies for professional Australian Footballers.

Summary of Study Three

The salience of job-specific stressors in Study Three supports calls for researchers to go beyond the global measures of stress that the JSM provides (Sparks & Cooper, 1999). More specifically, the results of the present study suggest that future occupational stress research needs to examine stressors that are particularly relevant to the occupation or industry in question as well as the more generalised measures of job demand, job control and social support. However, these results are in contrast to the
findings from Study One. In this case, the vast majority of the strain experienced by managers was explained by the JSM; the job-specific stressors added very little predictive value to that already provided by the generic model. The inconsistent performance of the augmented JSM, as well as other similarities and differences between the Studies One and Three, will be discussed in the following section.

Comparing the Results of Studies One and Three

The Inconsistent Performance of the Augmented JSM

The results of Studies One and Three show that both the generic components of the JSM and the job-specific stressors were significant predictors of the strain experienced by the professional footballers and managers. Although these results support the view that generic models of job strain should be combined with more situation specific models, the inconsistent performance of the augmented model suggests otherwise. In Study One, only a small proportion of the explained variance was attributed to the job-specific component of the augmented JSM. This level of variance was not significant and consequently the augmented model was deemed to add little explanatory value beyond that already provided by the JSM. However, when assessing the strain experienced by professional Australian footballers, the augmented model accounted for significantly more of the variance over and above that explained by the JSM.

Overall, the results of Studies One and Three suggest that the augmented JSM provides a more accurate explanation of the strain experienced by the professional
footballers than it does for managers. There are two possible explanations for this fluctuating level of relevance.

**Explanation One: JSM coincides with the work characteristics that are important for managers**

The first explanation is based heavily on the rationale that job stressors result from the work structures and characteristics that are important in each occupation (Barley, 1990; Sparks & Cooper, 1997). The importance of these work characteristics varies according to the nature of the tasks typically undertaken in each occupation, the conditions that workers are exposed to, the education and training that is required to enter each occupation, and the cultural values that dominate the profession. This inter-occupational variation in work characteristics then leads to stressors that are more dominant in some occupations but not others. In the case of professional footballers, the important work characteristics went beyond demand, control and support, and included the short career-span of AFL footballers and the consistently high standards of performance that players are expected to achieve. The results of Study Three demonstrate that the JSM was unable to account for all the important work characteristics relevant to this occupation.

However for managers, it is possible that the three components of the JSM simply coincided with the work characteristics that are an integral part of the work undertaken by managers. As outlined in the discussion of Study One, the strong influence of control and support can be linked to the nature of managerial work and the changing context that managers work in. While the complexity and demands associated with managerial positions are increasing, there are not commensurate increases in job control (European Foundation for the Improvement of Living and
Working Conditions, 1999; Worrall & Cooper, 1999). Furthermore, many middle and lower-level managers have the responsibility of managing the conflict between shop-floor employees and the organisation’s most senior staff and, as a result of constantly being ‘piggy in the middle’, are at risk of being denied the level of social support they need (Denham et al., 1997). Therefore, it is not that the job-specific stressors do not have an influence on the strain experienced by managers, but rather, the dimensions of the JSM coincide with the work characteristics that have the greatest impact on the well-being of managers.

The possibility that the most important work characteristics experienced by managers simply coincided with the components of the JSM suggests that it is the relevance and importance of the work characteristic that is central to the level of strain produced. This view then implies that the debate over the relative influence of generic and job-specific stressors is redundant. Researchers should identify the most important characteristics of each occupation, irrespective of whether it is labeled a ‘generic’ or ‘job-specific’ work characteristic. This approach is consistent with that adopted in commonly used occupational stress audits, such as the Occupational Stress Inventory (Cooper, Sloan, & Williams, 1988) or the Job Stress Survey (Spielberger & Reheiser, 1994), where a large number of work variables is measured. While some of these work variables relate to aspects of job demand, job control, and social support, most do not. The dimensions of the JSM then become a part of a long list of other work characteristics that are examined in the process of identifying the most influential work stressors.

**Explanation Two: JSM more relevant to conventional occupational groups**

The second explanation for the fluctuating performance of the augmented JSM is that the generic model is a much better predictor of strain experienced by conventional
occupations like management, than it is when predicting strain in highly specialised occupational groups such as professional sport. The possibility that the JSM is more applicable to conventional occupations is based on; (a) the large amount of explained strain reported by managers that was attributed to the generic model, and (b) the results of previous studies showing that the JSM has strong predictive value among a range of mainstream occupational groups.

The view that the augmented JSM is more applicable to unusual and less mainstream occupations is well supported by the results of Studies One and Three (refer Figure 6). These results indicate that there was only moderate support for the augmented model and this support reached its peak when examining the work

Figure 6. The proportions of explained strain accounted for by the JSM (shaded) and job-specific stressors (unshaded) for (a) managers and (b) professional Australian footballers.
characteristics that explained the psychological health of professional Australian footballers. Of the four health outcomes measured in Studies One and Three, there was only one – the psychological health of professional Australian footballers – where the level of variation explained by job-specific stressors exceeded 13%. In other words, the JSM accounted for over 87% of the explained variation for three of the four measures of health.

The relatively strong performance of the generic model across the two occupations suggests that the capacity of the JSM to predict the strain experienced by managers was not a coincidence. Instead, the results strongly suggest that this model provides an accurate description of the working conditions that have the greatest impact on job strain and, even in highly unconventional occupations, the job-specific model adds only moderate value to the JSM.

The cross-occupational relevance of the JSM is also well supported by previous research. In particular, the work of Karasek and colleagues (Karasek, 1979; Karasek, 1990) has demonstrated that the JSM is predictive of job strain across a range of conventional occupational groups, including machine operators, carpenters, nurses, bank officers and managers. Furthermore, other studies have shown that job demands, job constraints and job support are predictive of strain within an occupationally homogenous group as well as between different occupations (Jones, Fletcher, & Ibbetson, 1991; Payne & Fletcher, 1983). The broad relevance of the JSM supports the view that despite the sources of workplace stress varying across different occupational groups, the primary causes of stress in today’s workplaces are heavy workloads, a lack of control and poor support (Cartwright & Boyes, 2000; Cartwright & Cooper, 1996; Fletcher, 1991). The results of the present study, combined with previous research supporting the cross-occupational relevance of the JSM, indicate
that the second explanation for the inconsistent performance of the augmented JSM is likely to be the more accurate explanation.

Job demand, job control and social support are work characteristics that can be found in every job and every work situation and, irrespective of the type of work undertaken, these characteristics will have a large impact on the level of strain experienced. Nevertheless, the results of Study Three indicate that there are certain occupations where the working environment is highly specialised and a more situation-specific model is required. Professional Australian football is one such occupation. The unusual job description of a footballer, that revolves around preparing for and playing football, combined with the unique career structure of professional sport (i.e., early start-early leaving), gives rise to a number of work characteristics that are relatively unique among occupational groups. In-turn, these unique work characteristics lead to stressors that are specific to football and are not readily experienced by other occupational groups. For example, the stressor, post-football uncertainty, is closely related to the short life-span of AFL footballers and the lack of opportunities that players have to enhance their non-football employment skills. The generic dimensions of the JSM cannot adequately account for this work characteristic and consequently any stressors that extend from the early start-early leaving career structure are overlooked or misinterpreted by this model. However, a more job-specific model that was able to account for the stressors associated with the unusually short and intense career-span of an AFL footballer would explain a greater proportion of the job strain than if the generic model was used alone.

The explanation that the JSM offers a more accurate explanation of the work-strain relationship in conventional occupations does not contradict the view that work characteristics play a key role in determining job stressors. Instead, this explanation
highlights that the most critical work characteristics in the work-strain relationship are job demand, job control and social support. The importance of these characteristics diminishes as the occupation becomes more unconventional.

**Comparisons with Previous Studies**

The view that the augmented JSM may be only applicable to highly specialised occupations only partly supports previous studies examining the relative influence of generic and job-specific stressors (Beehr et al., 2000; Narayanan et al., 1999; Sparks & Cooper, 1997). Rather than suggesting that all occupations will consist of job-specific stressors that equal or surpass the importance of demand, control and support, this explanation posits that only very unconventional professions will have stressful work characteristics that reach this level of significance. The lack of consistency between the present study and previous research involving generic and job-specific stressors appears to be a major anomaly and, hence, attention needs to given to reasons why these differences exist.

The relative influence of generic and job-specific stressors has received little attention in previous studies and it is only recently that this issue has been the focus of empirical research. One area that is greatly under-represented in the research is the relative influence of all three components of the JSM and job-specific stressors. Aspects of job control and job demand have been examined in previous studies focusing on the influence of generic and job-specific stressors (Narayanan et al., 1999; Sparks & Cooper, 1999), however these studies did not measure social support. The support from others, particularly work-based support, plays a key role in the stress process (e.g., Karasek & Theorell, 1990; Payne & Fletcher, 1983) and studies that focus solely on demand and control are likely to underestimate the predictive
value of the JSM. Furthermore, a major barrier to using the Narayanan et al. and Sparks and Cooper studies to assess the relative influence of generic and job-specific stressors is that they both employed univariate and bivariate methods to analyse the results. Without assessing all independent variables simultaneously (i.e., using multiple regression analyses) it is difficult to gain an accurate understanding of the relative influence of generic and job-specific stressors.

Multiple regression has been used in previous research investigating the predictive value of generic and job-specific stressors (Beehr et al., 2000). However the focus of this research was to examine the contribution made by generic role stressors and, hence, the influence of other dimensions of the JSM was largely overlooked. Similarly, research that found occupation-specific models to be more plausible than the generic model upon which they were based, also focused on role stressors rather than the influence of demand, control and support (Bacharach & Bamberger, 1992).

In view of the paucity of research that has assessed the relative influence of the JSM and job-specific stressors, it is reasonable to conclude that the lack of consistency between the current study and previous research is a result of the different generic models that were employed in each study. The results of the present study strongly suggest that the JSM offers a more accurate explanation of the work-strain relationship than the role stressor models. This proposition has considerable intuitive appeal. For example, if employees are feeling high strain as a result of role ambiguity, a key component of a number of role stressor models, then informational support (e.g., accurate advice and guidance from a superior) can help the employee clarify the key expectations. Likewise, if role conflict is a key source of stress, then increased decision making freedom combined with strong informational and appraisal support can help reduce the source of this conflict. These examples are consistent with
research showing that participation in decision making has a significant ameliorating effect on role conflict and role ambiguity (Jackson, 1983) and underline the importance of job control and social support in shaping the work experiences of employees in all occupations. The more control and support people have in their jobs, the more capable they are of modifying work overload, role conflict, role ambiguity and other common sources of stress.

**Job-Specific Stressors: Inter-Occupational Variations**

The third hypothesis examined in the present investigation stated that there would be both similarities and differences in the job-specific stressors experienced by managers and professional Australian footballers. In addition, Hypothesis Four indicated that the variations in the job-specific stressors will be attributed, in a large part, to the important characteristics of each occupation. While there was only partial support for Hypothesis Three, the results of the regression analyses provided strong support for Hypothesis Four.

In contrast to part of Hypothesis Three, there were no job-specific stressors that were common to both managers and professional footballers. The descriptive statistics from Studies One and Three indicated that the constant pressure to achieve high standards of performance was a frequently cited large or major source of stress for both occupational groups. Likewise, the bivariate correlations suggested that this stressor was closely associated with the outcome variables for managers and footballers. However the regression analyses revealed that this stressor was not predictive of the strain experienced by managers and, contrary to Hypothesis Three, there were no direct similarities in the job-specific stressors experienced by both occupational groups. Instead the job-specific stressors were unique to each
occupational group. The constant pressure to achieve a high standard of performance and post-career uncertainty were predictive of the strain experienced by the footballers, but not for the managers, while a lack of resources to accomplish tasks was a significant stressor for managers but not for footballers.

Table 8

The job-specific stressors predictive of psychological health and job satisfaction for managers and professional Australian footballers.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Job-specific stressors predictive of job strain</th>
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<td></td>
<td>Psychological health</td>
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<td>Managers</td>
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<tr>
<td>Professional Australian footballers</td>
<td>Post-career uncertainty</td>
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As was predicted in Hypothesis Four, the variation in the types of job-specific stressors identified in Studies One and Three can be linked to the work characteristics that are important in each occupation.

In the case of the constant pressure to perform to a high standard, the prominence of this stressor is a reflection of the different requirements of professional football and management. One of the characteristics of professional football that distinguishes it from most other occupations is that members of this profession perform in front of a paying audience. Performing is therefore central to the role of a professional footballer. Coupled with the high levels of competition that exists within and between
clubs, this characteristic of professional football demands that players execute their skills with a high degree of precision. Yet the pressure to achieve high performance standards is not limited to match-day when players perform in front of tens of thousands of spectators and hundreds of thousands of television viewers. Coaching staff, team managers, and other support staff constantly monitor the performances of players. Whether in a match, on the training track or in the gym, all players are expected to maintain a high standard of performance. The consequences of not performing to the standard expected, even during the pre-season conditioning period, are dramatic. The results of Study Two indicate that players who experience short lapses in performance face demotion while those who perform below expectations for an extended period risk losing their professional contract.

Although managers are also under considerable pressure to ensure that they achieve high levels of performance, the effectiveness of a manager is reflected not only in their individual accomplishments, but more importantly, in the achievements of their subordinates. Organising and leading others is fundamental to the role of a manager (Carroll & Gillen, 1987; Industry Task Force on Leadership and Management Skills, 1995) and this work characteristic may partly explain why constant pressure was not predictive of the strain experienced by managers.

The other job-specific stressors can also be seen to mirror characteristics that are relatively unique to each group. In the case of the football-specific stressor, post-career uncertainty, this source of stress is closely linked to the short career span of professional footballers, the all-consuming nature of their profession and their narrow job description. The average career-span of an AFL footballer is two years, and even if players have long successful careers in football, the maximum age of 32-34 years is still young in terms of their overall life (Ogilvie & Howe, 1982). Nevertheless, while
players are contracted to an AFL club, they are expected to attend all training
sessions, team meetings and official club functions. All players, regardless of whether
they are a best-and-fairest winner or a recent draftee, are expected to be totally
committed to the goals of the team (Ryan, 1999). Thus, players rarely get the
opportunity to develop or maintain a meaningful career outside of football. Even
studying full-time is impossible when training sessions, for example, take place
during standard business hours. The need to develop non-football skills and
knowledge is compounded by the narrow job description of a professional footballer.
Although professional football can instill a sense of determination and teamwork, the
skills acquired are highly specific to the sport and, hence, have limited appeal to non-
football employers (Linnell, 1998). With few opportunities for developing a broader
skill-base, combined with the inevitable prospect of retiring when most other
professional groups are reaching their most productive working years, it is
understandable that many players are greatly concerned about their life after football.
This concern was expressed very concisely in Study Two, “Football has increasingly
become full-time and you don’t get a chance to study or get experience outside of
football. And if you do finish football without any job, what do you do? It is huge - it
stresses me mentally”.

The short-career span of professional footballers is in contrast to the typical career
structure experienced by managers. The vast majority of Australian managers are over
30 years of age (Australian Bureau of Statistics, 2000) and generally enter senior
ranks having already spent a number of years becoming technically competent in the
industry in which they work (Wash, 1995). In addition to this on-the-job training,
most managers are also required to have a Bachelor's degree in their original
occupation (Wash, 1995). In the case of the participants taking part in Study One, who
were all members of a Masters of Business Administration alumnus program, these managers also had post-graduate qualifications and could therefore offer current and future employers a broad range of competencies. Coupled with the valuable skills and knowledge they gain during their career, the prospect of retrenchment or redundancy is unlikely to be as stressful for the managers in Study One as they are for professional footballers. Overall, the structure of each occupation, combined with the unique context of each occupation, appears to be a key reason why post-career uncertainty was predictive of strain for professional footballers but not for managers.

Structural features of the occupation can also help explain why the job-specific stressor, lack of resources to accomplish tasks, was a significant predictor of strain for managers but not for footballers. With increasing levels of competition, organisations in both the private and public sector are continually looking at ways of increasing organisational performance while reducing resources (Dunford & Bramble, 1998). The need to ‘do more with less’ has not only resulted in large scale delayering of management positions (Littler et al., 1997), but has also lead to a significant reduction in the resources available to managerial staff (Burke & Leiter, 2000). The reduction in resources has caused many managers to take on a range of other administrative and people management tasks that were previously the responsibility of more specialised personnel (Cartwright & Boyes, 2000; Worrall & Cooper, 1999).

Although the increase in competition has lead to a decrease in resources for many managers, the high levels of competition within and between AFL clubs has actually increased the resources available to players. In order to maximise the performance of their squads, AFL clubs are spending increasingly large proportions of their operating budgets on improving the resources available to players (Newnham, 1998). These resources include new and more diverse training facilities, video and statistically-
based performance feedback systems, improved medical and rehabilitation services, the introduction of state-of-the-art conditioning and fitness testing equipment, and the appointment of specialised coaching, medical and other support staff (AFL, 2001; McKenzie, 1999). In terms of fitness and overall football development, AFL football clubs are well equipped to enable their players to achieve and maintain elite levels of performance. With these facilities and services available, it is not surprising that the stressor lack of resources to accomplish tasks was not identified as a predictor of job strain in Study Three.

In summary, this section has shown that the differences in the job-specific stressors experienced by footballers and managers can be attributed to the unique context that both occupational groups work in, the structure of their jobs and the demographical profile of the people who belong to each group. In both Studies One and Three, the age of the participants, the typical career span of their profession, their job description and the resources they received can all be seen to influence the unique stressors experienced by managers and professional footballers. These findings strongly suggest that when identifying the stressors that are specific to certain occupations, the context as well as the content of the job needs to be examined. The need to undertake in-depth analyses of the background context becomes even more important in the case of highly unconventional or emerging occupations where there is often very little information on the environments that these groups work in or the stressors they commonly experience.

Social Support: The Influence of Work and Non-Work Support

A key feature of Studies One and Three was the predictive capacity of social support. The results of the multiple regression analyses for both occupational groups indicated
that social support accounted for a significant proportion of the explained variance in psychological health and job satisfaction. This result is consistent with other studies showing that support increased predictability over and above Karasek’s original demand-control model for a range of dependent variables including depression, anxiety and job satisfaction (Fletcher & Jones, 1990; Munro et al., 1998). Together these studies reinforce Karasek and Theorell’s (1990) decision to expand the original JSM.

However, Hypothesis Five stated that both work and non-work support would be predictive of the strain experienced by managers and professional Australian footballers. This hypothesis was not supported by the results. Instead, the results of the present study indicate that work-based support was far more influential in the work-strain relationship than non-work support. The amount of explained variation accounted for by non-work support was invariably very small and did not reach significance in any of the regression analyses. Conversely, the support from work sources accounted for the majority of the strain explained by the JSM in three of the four regression analyses. This result is consistent with other studies that have examined the effects of support from superiors, colleagues and subordinates (House & Wells, 1978; Karasek et al., 1982; Winnubst et al., 1982; Yang & Carayon, 1995). The influential role of work-based support reaffirms the importance of measuring both work and non-work support in occupational stress research rather than adopting a global measure of support that makes no distinction between the origin of the support.

The strong predictive value of work-based support also reinforces the matching approach to supportive relationships (Cutrona, 1990; Sarason et al., 1990). For social support to be effective in reducing the impact of the stressor, the guidance, feedback or assistance needs to be provided by someone who has the knowledge, skills and the
authority to deal with the stressor and/or address the needs that the stressor activates (Gottlieb, 1983; Terry et al., 1993). For both the managers and the professional footballers who took part in this study, the results suggest that this functional support was more likely to be effective if provided by superiors, colleagues and designated support staff.

Limitations

There are a number of limitations that need to be kept in mind when assessing the results of the present study. These limitations are discussed in the following subsection.

Study Design Factors

All three studies employed a cross-sectional design and therefore the results are limited to the period that the data was collected. The ability to develop firm conclusions regarding the relative influence of the generic components of the JSM and job-specific stressors would be strengthened by a longitudinal study. Such a study should be designed so that the data is collected at different times of the year. This design would help reduce the influence of stressors that are affected by seasonal factors and would provide a more accurate picture of the stressors that consistently account for significant proportions of job strain.

An additional limitation of the study design adopted in Studies One and Three was its correlational structure. These studies were not experimental and, therefore, it is not possible to establish a cause and effect relationship between the independent and
dependent variables. However, the influence of the JSM in the present study was very consistent with previous research examining the influence job demand, job control and social support (Jones, 1987; Karasek, 1979; Karasek & Theorell, 1990). Consequently there is sufficient evidence to conclude that the components of the JSM play a major role in the strain experienced by managers and footballers.

Self-Reported, Subjective Data

Self-report scales were used to collect the data in Studies One and Three. Furthermore, all data was based on the subjective views of the participants. The reliance on this subjective, self-reported data raises concerns about common method variance. This concern applies more to the dependent, rather than the independent variables. In terms of perceptions of working conditions, studies have shown a high correlation between expert ratings of job conditions and subjective assessments (Karasek et al., 1981; Spector, 1992). However additional objective measures of the outcome variables would have enhanced the validity of the findings. For example, physiological outcomes such as salivary cortisol and arterial blood-pressure could have been used to measure job strain, in addition to the psychological health and job satisfaction scales. These physiological measures have been utilised in previous research examining the JSM and are seen to be reliable measures of job strain (Fox et al., 1993).

Limited Number of Occupational Groups

The results of Studies One and Three indicate that the most critical work characteristics in the work-strain relationship are job demand, job control and social support. Although this result is well supported in the literature, the conclusion that the augmented JSM becomes more influential as the occupation becomes more
unconventional is based largely on the results of the present study. However this study has only involved two occupational groups - one conventional and the other unconventional. A key area of future research is therefore to examine the performance of the augmented JSM across other occupational groups. The involvement of a number of different occupational groups, that represent varying levels of conventionality, would not only provide more certainty regarding the relative influence of the JSM and job-specific stressors. Such a study would also allow researchers to estimate the point on the conventionality continuum where job-specific stressors start to explain significant proportions of job strain. This information could then be used by practitioners to decide which occupations are more likely to require the identification of job-specific stressors.

**Limited Number of Stressors**

Great care was taken to identify the job-specific stressors that were most relevant to the occupational groups being studied. The job-specific stressors measured in Studies One and Three were based on the views of managers and footballers themselves and, hence, were tailored to the needs of people working in these occupations. Furthermore, only the most frequently identified large and major sources of stress were entered into the regression analyses, thereby making sure that the job-specific stressors were applicable to as many of the respondents as possible. Despite these steps being taken, job-specific stressor scales used in Studies One and Three were not exhaustive and it is possible that some job stressors may not have been taken into account.
Convenience Sample (Study One)

Another limitation of Study One is that the managers were all members of a Masters of Business Administration alumni program. Thus readers should be aware that the sample was biased towards managers who had higher levels of formal education. Education is a moderator in the work-strain relationship (Ivancevich & Matteson, 1980) and this may have influenced the relative impact of the generic and job-specific stressors. For example, a post-graduate management program is likely to improve the manager’s capacity to become involved in higher levels of decision making. However, if these decision-making opportunities were not provided, the increased level of education may merely exacerbate the manager’s frustration with the lack of control. Therefore, a lack of control may be a larger source of strain for more educated managers than it is for managers who don't have these formal qualifications. Despite a bias towards managers with higher degrees, the results of Study One parallel previous research involving managers who had varying levels of education (Karasek, 1979; Karasek & Theorell, 1990). The consistency with previous studies adds credence to the results of the first study and suggests that the JSM has the capacity to predict the strain experienced by managers across all educational levels.

Implications

General Implications

Cost-effectiveness of augmentation

The results of the present study indicate that strategies designed to identify job-specific stressors will be more cost-effective for a highly unconventional occupation
like professional sport than they would for a conventional occupation such as management. In the case of the conventional occupation, the JSM already provided an accurate explanation of the work characteristics that contributed to job strain. The job-specific stressors added very little explanatory power to the generic model. Consequently, the large amount of time and resources that is required to identify these more situation specific stressors, is not likely to be cost-effective. Although there will be job-specific stressors influencing the strain experienced by conventional occupational groups, the contribution of these stressors will be relatively minor compared the components of the JSM.

However, the results of Study Three indicate that as the occupation becomes less conventional, the relevance of the JSM is reduced. The generic model was too narrow to capture the unique career structure and highly specific work characteristics experienced by professional footballers. As a result, the job-specific stressors accounted for significantly more of the explained strain over and above that already provided by the generic model. This finding indicates that if the JSM was used alone, and the job-specific stressors were not identified, the strain associated with these variables would have been overlooked. Furthermore, any recommendations regarding strategies to reduce the strain experienced by professional footballers would have been based on an incomplete understanding of the work factors that give rise to job strain. These ill-informed strategies may have ultimately undermined, rather than improved, the health of professional footballers. In future, researchers and practitioners need to assess the level of conventionality involved in an occupation. If the occupation does not conform to conventional job structures, on criteria such as career life-span and entry requirements, then the present study suggests that researchers should identify and address job-specific stressors.
The relevance of the augmented JSM to other professional performers

The ability of the augmented JSM to account for unconventional work characteristics experienced by professional Australian footballers raises the question, what other occupations would this model be applicable to? This study has identified a number of unusual work characteristics that, if deemed important to an occupation, would indicate that the augmented JSM used in Study Three offers valuable insights into the strain experienced by this occupation. Occupations that perform to an audience, have an early start-early leaving career pattern and place heavy emphasis on natural talent are vulnerable to the job stressors, constant pressure to perform to a high standard and post-career uncertainty. These characteristics are clearly relevant to other professional athletes, such as professional basketballers, tennis players, golfers, racing car drivers and jockeys. The characteristics are also applicable to other performing artists, including models, ballet dancers and certain musicians (e.g., 'pop' singers) (U.S. Department of Labor, 1977; Wash, 1995). In each of these cases the occupation performs to a paying audience and is expected to complete their roles with a high degree of precision and effectiveness. The pressure to consistently achieve high standards of performance ensures that members (a) have a high level of inherent talent that has been nurtured from an early age, (b) are heavily committed to a specialised and all-consuming training routine that provides few opportunities for developing cross-occupational skills, and (c) are relatively young and thereby have the physical attributes necessary to meet the demands of the occupation.

Overall, the relevance of these work characteristics to other occupations within the performing arts industry strongly suggests that the augmented JSM developed in Study Three would be a useful model for explaining the work-strain relationship within this industry. This is an important finding as performing artists are generally
under-represented in the occupational stress literature and little is known about the work characteristics that undermine the health of musicians, singers, dancers and other professional performers (Sternbach, 1995).

The value of the JSM in directing job stress research

Another key implication resulting from the present study is the strong support it provides the JSM. Both role stressor models and the JSM have been identified as examples of generic models that can potentially form the basis of occupational stress investigations (Bacharach & Bamberger, 1992; Sparks & Cooper, 1997). However the results of Studies One and Three suggest that researchers should give serious consideration to adopting the JSM as the foundation model when addressing the needs of conventional or unconventional occupations.

Previous research that has employed the JSM to investigate job strain has tended to focus on conventional occupations that represented relatively large numbers of working people (e.g., Fox et al., 1993; Karasek & Theorell, 1990; Landsbergis, 1988). In the case of Karasek and Theorell (1990), minority occupations such as professional athletes were considered too rare to utilise and were subsequently excluded from their research. Although the JSM has been shown to have strong cross-occupational relevance, it was noted in the literature review that the unconventional features associated with professional sport may lead to stressors that equal or surpass the strain associated with job demand, job control and social support.

However the results of Studies One and Three have shown that the JSM was a significant predictor of the strain experienced by both managers and professional Australian footballers. Although the job-specific stressors were found to be significant predictors of the strain experienced by each group, the disproportionate contribution provided by the JSM suggests that this model provides an adequate account of the
work-strain relationship for both conventional and unconventional occupations. Furthermore, the large amount of variance attributed to the JSM indicates that the dimensions of this model provide an empirically sound platform for developing job-specific models.

The role of work and non-work support

One of the key contributions made by this thesis is that it has helped clarify the role of work and non-work support. Previous research indicates that the support provided by supervisors, colleagues and subordinates has been found to be particularly important in preventing or reducing occupational strain (e.g., Winnubst et al., 1982; Yang & Carayon, 1995). Furthermore, adding work-based social support to the JSM has been found to increase the predictive capacity of the model over and above its original dimensions (Fletcher & Jones, 1990). However, not all research has supported the stress moderating effects of work-based social support. For example, Munro et al. (1998) found that non-work sources of support (not work support) provided a more valuable explanation of the relationship between social support and job strain. Moreover, there has been a tendency for researchers assessing the stress reducing benefits of social support to focus solely on work-based sources and hence there is a lack of information on the relative contribution made by both sources (Munro et al., 1998).

This thesis examined the role of work and non-work sources of support and found that work-based support was far more influential in the work-strain relationship than non-work support. The amount of explained variation attributed to non-work support was relatively small and did not reach significance in any of the regression analyses. These findings have two important implications.
Firstly, the results of Studies One and Three support the view that work-based support offers valuable opportunities for building less stressful, more satisfying and, overall, healthier environments to work. In view of the considerable human and economic costs of job strain, it is critical that organisations develop a comprehensive approach to identifying and meeting the support needs of their members. The importance of providing functional, needs-based support is particularly important for managers and professional footballers (refer following sub-section).

The second important implication resulting from the social support findings is that future research needs to continue to adopt a more specific approach to conceptualising and measuring social support. The social support scale used in this thesis measured the level of emotional, informational, instrumental and appraisal support participants received from work and non-work sources (Etzion, 1984). The predictive capacity of the work-based component of this scale adds weight to the view that specific forms of social support, rather than a global measure of an individual’s integration into social networks, are required to moderate the impact of stress (e.g., Cohen & Wills, 1985; Hagihara et al., 1998; Terry et al., 1993). These specific forms of support provide a means for assessing the extent that advice, assistance, feedback or other forms of support are tailored to the specific needs of the situation. As a result, the scale is much more reflective of the support workers receive and is therefore better equipped to assess the relationship between support and job strain.

**Examining the work context**

Regardless of whether the stressor was generic or job-specific, Studies One and Three found that these variables were closely linked to the context that each occupational group works in, the structure of their careers and the content of their jobs. In the case of the managers, for example, the strong influence of job control could be linked to
the declining level of autonomy experienced by many managers over the past decade. Likewise, the post-football career uncertainty experienced by many professional footballers was found to be closely associated with the short career-span of elite-level footballers, their highly specialised job description and the lack of opportunities for developing non-football competencies. The strong links between the contextual background of the occupation and the stressful work characteristics raises the need for researchers to become familiar with the occupation at the beginning of the research process. This contextual information can not only help researchers understand why certain events or conditions are considered stressful, but also provides key insights into strategies that may be able to reduce the severity of these stressors.

The lack of support for the JSM's interactive term

It is important to note that neither Studies One or Three supported the interactive component of the JSM. Although this finding weakens the plausibility of the JSM’s interactive mechanism, it does not detract from the predictive value of the model. The additive effects of demand, control and support indicate that these variables still play in integral role in the level of strain experienced by workers. Furthermore, the practical implications for strain reduction strategies, particularly job redesign, remain largely unchanged irrespective of whether the interactive or the additive model is supported (Dollard et al., 2000; Karasek, 1989). In both cases, interventions need to target three psychosocial work characteristics; demand, control and support.

Combining qualitative and quantitative methods

The final general implication resulting from the present study relates to the methodology used to identify the job-specific work characteristics. In Studies One and Three, qualitative methods were used to develop sources of stress scales that were
specific to each occupation. In the case of the professional footballers, there was very little information on the nature or the context of the stressors experienced by this occupation and thus a more in-depth qualitative study was undertaken (i.e., Study Two). The one-to-one interviews and focus groups undertaken in Study Two proved to be a valuable means for informing the questionnaire used in Study Three. The qualitative techniques helped identify the range of stressors experienced by AFL footballers and, in some cases, these stressors would have been overlooked if standard quantitative approaches were adopted. For example, the football-specific stressor, post-career uncertainty, is not included on the Occupational Stress Inventory (Cooper et al., 1988) or the Job Stress Survey (Spielberger & Reheiser, 1994) - two self-report scales that are designed to measure stressors common to a wide range of occupational groups and working environments. It is therefore important that when investigating the work characteristics that contribute to the strain experienced by unconventional occupations, researchers should adopt more qualitative methods to identify these characteristics. Although conducting in-depth interviews and focus groups is labour intensive and sometimes very costly there is the potential that certain situations or events may be ignored if these methods are not employed. Qualitative methods can also provide valuable contextual information and, as already noted, this information can be used to better understand why certain work characteristics are considered stressful and what might be done to reduce their impact.

**Implications for Managers**

Studies involving managers show that work-related strain among this occupational group is reaching epidemic proportions (Cohen & McKay, 1984; Tillson, 1997). The
high rate of strain among managers is a serious concern, particularly in light of the important roles that a manager is typically responsible for. The role of a manager in planning, organising, controlling and leading indicates that managers are a critical human resource for any organisation (Carroll & Gillen, 1987; Menon & Akhilesh, 1994). The central role that managers play in the performance of an organisation suggests job strain is not just a major threat to the health of managers, but is also a serious threat to organisational success (Albrecht, 1979). Without efforts to reduce the psychological strain experienced by managerial staff, organisations are destined to experience limited success.

The results of Study One indicate that significant reductions in managerial strain could be achieved by addressing job control and social support. The failure of job demand to reach a level of significance for either job satisfaction or psychological health suggests that these reductions could be achieved without major modifications to the amount and pace of work undertaken. Although job-specific stressors did not account for a significant proportion of the strain experienced by managers, consideration should be given to addressing the stressor, lack of resources to accomplish tasks.

Focus on middle and junior-level managers

Study One did not measure the respondent’s position on the managerial hierarchy. However it appears that strategies designed to reduce job strain need to focus on middle and junior managers. Managers are commonly perceived as having uniformly high levels of job control and social support (Cartwright & Boyes, 2000). However there are broad fluctuations in the level of decision-making freedom and support available to managers. Middle to lower-level managers are more likely to experience large gaps between responsibility and authority (McConville & Holden,
1999) and, as a result of managing the sharpest point of conflict between employer and employees (Denham et al., 1997), are also at greater risk of receiving inadequate levels of social support. Initiatives aimed at reducing strain among managers therefore need to ensure that there is greater equity between the demands faced by managerial staff and the control and support available to them.

**Emphasis on work-based support**

Study One also indicates that strategies aimed at improving the support received by managers need to address work-based sources of support, including supervisors, colleagues and subordinates. Supervisors and more senior personnel are a particularly valuable source of support since they are often the only ones who have the authority and the knowledge to address the functional support needs of managers. Mechanisms, such as regular feedback sessions and work unit meetings, need to be established to ensure that the workloads of managerial staff are being monitored and that managers are receiving the informational and appraisal support they need. Education also needs to be provided to give senior managers a better understanding of what social support is, why it is important and how it can be best provided. Furthermore the importance of these initiatives, and the messages they contain, need to be reflected in key organisational policies, such as mission statements, budgets and position descriptions. Without this level of structural and policy support, it is highly likely that the support needs of subordinates will be diluted by other organisational priorities.

**Control and support: capitalising on the interdependency**

Strategies designed to enhance job control and social support should not be seen as separate initiatives that require independent action. In practice, efforts to improve job control and social support can be mutually reinforcing (Karasek & Theorell, 1990).
The overall purpose of functional, needs-based social support is to provide individuals with the information, feedback or assistance that can help them deal with the problems they face. In the case of work overload, the ideas and assistance provided by peers or supervisors can help managers complete time consuming tasks more efficiently and effectively (House, 1981). Likewise, specific feedback from supervisors can give managers a clearer understanding of their work performance and what they need to do to achieve key objectives. In essence, high levels of support represent a critical resource that enables individuals to exert greater control over their environment.

Just as social support can enhance job control, mechanisms for improving job control can also boost worker support. Participatory decision making structures, such as semi-autonomous work teams, gives people the opportunity to exchange ideas, obtain feedback, identify needs and share concerns (House, 1981). If properly designed and facilitated, such structures then increase opportunities for giving and receiving effective support.

The pressure associated with increasingly competitive and cost-conscious market-places will continue to place enormous demands on organisations. Managers in particular will face mounting pressure to ensure that the organisation is able to meet the needs of its customers, employees and other key stakeholders. However without corresponding increases in work-based support and decision-making input, the results of this and previous research suggests that the rising pressure will result in high levels of job strain for many managers. Inevitably, the impact of this strain will be felt by whole organisations, not just individual managers.
Implications for Professional Australian Footballers

A review of the literature examining the sources and effects of stress experienced by athletes revealed that there was a lack of information on the strain experienced by professional Australian footballers. Furthermore, a number of ex-players, current players and coaches have expressed concern regarding stress among professional Australian footballers (Wilson, 1999). Consequently, the results of Study Three have considerable practical implications as well as contributing to the general body of knowledge relating to the relative influence of generic and job-specific stressors.

The results of Study Three revealed that the level of support from club sources, such as coaches and team-mates, was predictive of job satisfaction and psychological health. Although control was not associated with psychological health it was found to be predictive of job satisfaction. The study also found that there were negative relationships between post-football uncertainty and the constant pressure to perform to a high standard, on the one hand, and player wellbeing on the other.

Focus on intra-club support

There are a number of the player development and support programs developed by the AFL Players Association that can be seen to help players deal with some of the key stressors identified in this study. For example, the Total Individual Career/Education Planning and the Personal Development and Training programs clearly have the potential to reduce the strain associated with post-football career uncertainty (AFLPA, 1999). Although these programs are necessary, the strong links between work-based support and health suggests that the support from coaching staff, support staff and team-mates is more central to player wellbeing.
Work-based support may be particularly beneficial for combating the stress associated with poor on-field performances, injury and constant pressure to achieve high standards of performance. Although poor form and injury were not predictive of job strain among AFL footballers, the descriptive statistics combined with the frequency that these stressors were cited in Study Two suggests they may still be key source of stress for some players. Stressors such as poor form and injury are often seen as the inevitable and largely uncontrollable hazards of professional sport. However, the results of the Study Two indicated that the lack of support experienced by players who were going through a form slump or who had experienced a long term injury suggests that the severity of these stressors could be reduced by improved support. Functional support in the form of direct assistance, advice, feedback, recognition or positive affirmations all have the potential to prevent or minimise the stress caused by these hazards. A key to this level of support being provided, however, is for coaching staff, team-mates and support staff all to be active support providers. The highly specific nature of players’ support needs means that outside individuals such as personal counselors, player managers or family and friends are generally not in a position to help address these football specific needs (Rosenfeld et al., 1989). Clubs therefore need to be aware of the impact that a lack of support can have on player wellbeing. Furthermore, clubs should be pro-active in making sure players’ support needs are identified and addressed.

**Enhancing player control**

Job control is another area that can have a significant impact on the strain experienced by players. Results of this and previous research show that having a say in what happens in the workplace enables employees to gain greater satisfaction from their work and to address or avoid stressful situations (Jackson, 1983). Although a number
of clubs are reported to have participatory decision making processes in place, there is very little information on the number of players who are meaningfully involved in decision making or the outcomes of this increased participation. An area for future research would therefore be to closely examine the impact of participatory decision making in clubs and to identify the factors that enhance or inhibit more inclusive management practices being adopted.

Evaluating player development and support services

By itself, the components of the JSM failed to provide an adequate explanation of the work characteristics that influenced the strain experienced by professional footballers. Job-specific stressors also accounted for a significant proportion of the variance in psychological health and job dissatisfaction and, consequently, these stressors also need to be addressed. Although strategies are already in place to help players deal with post-football uncertainty, there is a lack of information on the effectiveness of these initiatives. Similarly, little is known about the strategies individual players and clubs use to address the strain associated with the constant pressure to achieve high standards of performance. Another area for future research is therefore to examine the benefits of the player development and support services available at each club and determine if and where these resources could be improved.
Conclusions

The human and economic costs of job strain indicate that occupational stress is both a serious public health issue and a major barrier to organisational success. Strategies aimed at reducing these costs need to identify and address those work characteristics that are particularly influential in the work-strain relationship. The primary aim of this thesis was to contribute to the understanding of the work-strain relationship by assessing the capacity of the augmented JSM to predict the strain experienced by managers and professional Australian footballers.

Previous research suggested that the JSM and the job-specific stressors would both account for significant proportions of the strain experienced by managers and professional footballers. Contrary to this expectation, the results of the regression analyses only provide moderate support for augmenting the JSM with job-specific stressors. Instead of supporting the versatility of the augmented JSM, the findings further reinforce the broad relevance of the JSM. Job demand, job control and social support are work characteristics that are applicable to all occupational groups and, regardless of the job description, these variables will have a large bearing on the work-strain relationship. Although there will be job-specific stressors influencing the strain experienced in individual occupations, this thesis suggests that the contribution of these stressors will be relatively minor compared to the JSM.

Despite the strong support for the JSM, this thesis also found that the importance of demand, control and support diminished as the occupation became more unconventional. The generic model was too narrow to capture the unique and highly unconventional work characteristics that are important for professional footballers.
and, as a result, the job-specific stressors explained significantly more of the strain over and above that already provided by the generic model.

The relevance of the augmented JSM to unconventional occupational groups has important practical implications. The results of Study One indicate that when investigating the stressors experienced by conventional occupational groups such as managers, the large amount of resources required to identify job-specific stressors are unlikely to be cost-effective. In contrast, the influence of the more situation specific stressors is significantly greater in unconventional occupations and thus the benefits of identifying these non-generic stressors are more likely to outweigh the costs.

This thesis has also identified strong connections between job-specific stressors and important characteristics of the occupation being studied. These connections are consistent with previous research and suggest that before attempting to identify job-specific stressors, researchers need to first become familiar with the structure and context of the occupation. This preliminary step is particularly important when working with an unconventional occupation like professional football where there is very little published data on the conditions typically experienced by members. The results of Study Two demonstrate that qualitative research methods offer valuable opportunities for contextualising job stressors, while at the same time, informing quantitative studies.

The close links between important work characteristics and job stressors also suggest that the augmented JSM developed for professional footballers would be relevant to occupations that shared similar characteristics. Dancers, models, musicians, the broader professional athletic community and other performing artists are all likely to be exposed to the stressors, post-career uncertainty and constant pressure to perform to a high standard. The structural characteristics that define these
occupations, and thereby give rise to the job-specific stressors, include a narrow job description that revolves around performing to an audience, an early start-early leaving career structure and a heavy emphasis on natural talent that has been nurtured from a young age. Identifying these potentially stressful characteristics is an important finding, particularly as performing artists represent a high-risk population that has been largely overlooked by occupational stress researchers.

The final issue addressed in this thesis was the role of work and non-work support. Research examining the relationship between social support and job strain has tended to focus solely on work-based sources of support and, hence, a key contribution made by this thesis is that it has helped clarify the relative influence of work and non-work support. The findings from Studies One and Three show that the support provided by supervisors and colleagues was a significant predictor of wellbeing for both managers and professional footballers. In contrast, the level of explained strain accounted for by non-work support was not significant. These results indicate that when developing strategies to protect and enhance employee well-being, particular attention should be given to monitoring and, where necessary, boosting the effectiveness of work-based support. At a more theoretical level, the strong performance of work-based support reinforces the view that a more specific, functional approach should be adopted when conceptualising and measuring social support. Scales that are designed to examine the different forms of support provide a more realistic measure of the specific support needs of workers and are therefore better equipped to assess the relationship between support and job strain.
Appendix A

Plain Language Statement for Study One

Dear Alumni member

I would like to invite you to take part in a survey aimed at identifying the sources and effects of stress experienced by members of the Bowater School of Management Alumni Association.

I am undertaking this survey as part of a PhD I am completing at Deakin University. The information you provide in this survey will be enormously beneficial. From a prevention point of view, this project will help overcome a lack of information on the sources and effects of stress experienced by managers and other senior personnel.

The questionnaire will take between 15-20 minutes to complete. In the questionnaire you will not only be asked to answer questions that relate specifically to stress. You will also be asked about your sense of wellbeing, your level of job satisfaction, the support you receive from work and home and the demands you face on a daily basis. I would appreciate it if you could complete this questionnaire and return it in the stamped, self-addressed envelope provided by 31 July 1998.

Strict guidelines will be followed to ensure that the identity of those involved in this survey will be kept confidential. Each questionnaire has been allocated a number to help keep 'track' of who has completed the questionnaire and, if necessary, to distribute reminder notices. If a questionnaire has not been returned within two weeks, reminder notices will be sent out. Please note that only the Alumni Association will have the names and addresses to check against returns. I will not have access to the names and contact information.

Once you return your questionnaire the responses will be collated and kept in a locked office here at Deakin University. The data will then be analysed and a summary of the findings will be published in a later edition of the Alumni Association's newsletter. I also hope to publish the findings in relevant scholarly journals. However, in each of these cases no individual responses will be referred to; only the statistical significance of relationships and trends in the entire data-set will be presented.

If you require further information regarding this survey, you can contact myself or my supervisors on the numbers provided below. Thank you for your interest and support. I look forward to receiving your completed survey soon.

Andrew Noblet
Bowater School of Management & Marketing
Deakin University
03 9251 7271
This is an anonymous questionnaire. Please ensure that you do not write your name, or any other comments that will make you identifiable, on this questionnaire. Once you have completed this questionnaire, please seal it in the attached reply-paid envelope and return to the address provided.

This survey is being undertaken by
Andrew Noblet, Deakin University
Ph: (03) 9251 7271
What is this questionnaire about?

This questionnaire will take between 15-20 minutes to complete. In the questionnaire you will be asked questions about the types of situations or events that cause you stress. You will also be asked to answer questions about your sense of wellbeing, your level of job satisfaction, the support you receive from work and home and the demands you face on a daily basis.

Strict guidelines will be followed to ensure that your identity will be kept confidential. Each questionnaire has been allocated a number to help keep 'track' of who has completed the questionnaire and, if necessary, to distribute reminder notices. If a questionnaire has not been returned within two weeks, reminder notices will be sent out. Please note that only the Alumni Association will have the names and addresses to check against returns. I will not have direct access to the names and contact information.

Once you have completed this questionnaire, please seal it in the attached reply-paid envelope and return to the address provided. I would appreciate it if you could return this questionnaire by 31 July 1998.

If you have any queries about the content of this questionnaire, please contact myself at Deakin University on (03) 9251 7271.

Thanks
Andrew Noblet
Deakin University

Should you have any concerns about the conduct of this research project, please contact the Secretary, Deakin University Ethics Committee, Research Services, Deakin University, Burwood Campus, 221 Burwood Highway, Burwood VIC 3125 Tel No (03) 9251 7123.
Job satisfaction

The following set of items deals with various aspects of your job. I would like you to tell me how satisfied or dissatisfied you feel with each of these features of your job. (Please circle one number for each item)

<table>
<thead>
<tr>
<th>1. The physical work conditions</th>
<th>Extremely satisfied</th>
<th>Very satisfied</th>
<th>Moderately satisfied</th>
<th>Unsure</th>
<th>Moderately dissatisfied</th>
<th>Very dissatisfied</th>
<th>Extremely dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. The freedom to choose your own method of working</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Your fellow workers</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. The recognition you get for good work</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Your immediate boss</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. The amount of responsibility you are given</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Your rate of pay</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Your opportunity to use your abilities</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Industrial relations between management and employees</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Your chance of promotion</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. The way your organisation is managed</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. The attention paid to suggestions you make</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Your hours of work</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. The amount of variety in your job</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Your job security</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Now taking everything into consideration, how do you feel about your job as a whole?</td>
<td>1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

General Health

Please answer this question by indicating how often you have recently……

| 17. Been able to concentrate on whatever you’re doing | 0 1 2 3 |
| 18. Lost much sleep over worry | 0 1 2 3 |
| 19. Felt that you’re playing a useful part in things | 0 1 2 3 |
| 20. Felt capable of making decisions about things | 0 1 2 3 |
| 21. Felt constantly under strain | 0 1 2 3 |
| 22. Felt you couldn't overcome your difficulties | 0 1 2 3 |
| 23. Been able to enjoy your normal day-to-day activities | 0 1 2 3 |
| 24. Been able to face up to your problems | 0 1 2 3 |
| 25. Been feeling unhappy and depressed | 0 1 2 3 |
| 26. Been losing confidence in yourself | 0 1 2 3 |
| 27. Been thinking of yourself as a worthless person | 0 1 2 3 |
| 28. Been feeling reasonably happy all things considered | 0 1 2 3 |
**Sources of stress**

In this question you are asked to indicate the extent to which each of the following is a source of stress in your current job. (Please circle **one** number for **each** factor)

<table>
<thead>
<tr>
<th>Factor</th>
<th>Not at all</th>
<th>Moderate source of stress</th>
<th>Major source of stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Failure to meet performance objectives</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Difficulty balancing work and non-work commitments (eg. family &amp;/or study commitments)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Possibility of being re-trenched or made redundant</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Not sure what you'd do if your current career came to an end</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Not feeling a part of the team</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Constant pressure to perform to a high standard</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Long working hours</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Criticism from senior management</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Lack of feedback on how you're performing</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10. Unfair treatment from senior management</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11. Lack of recognition for good work</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12. Not having any say in what happens in your organisation</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13. Lack of support when going through a stressful period</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14. Disagreements/conflict with senior management</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15. Disagreements/conflict with colleagues</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16. Lack of opportunity to take on more senior roles</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17. High levels of competition between employees</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18. Excessive scrutiny from customers or general public</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19. Inadequate salary</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20. Injury or illness</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21. Lack of resources to accomplish tasks</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Support

I am interested in learning about some of the ways that you feel other people have helped you or tried to make life more satisfying for you – both at work and outside work. Please circle the level of support you have received from others.

<table>
<thead>
<tr>
<th></th>
<th>Very much</th>
<th>Moderate amount</th>
<th>Very little</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To what extent do you get appreciation and recognition for what you do?</td>
<td>a) In your work</td>
<td>7 6 5 4 3 2 1</td>
<td>b) In your life outside of work</td>
</tr>
<tr>
<td>2. To what extent are you able to share the burden with others in terms of your duties and responsibilities?</td>
<td>a) In your work</td>
<td>7 6 5 4 3 2 1</td>
<td>b) In your life outside of work</td>
</tr>
<tr>
<td>3. To what extent do you receive feedback on your performance?</td>
<td>a) In your work</td>
<td>7 6 5 4 3 2 1</td>
<td>b) In your life outside of work</td>
</tr>
<tr>
<td>4. To what extent are you able to take time off when you are under pressure?</td>
<td>a) In your work</td>
<td>7 6 5 4 3 2 1</td>
<td>b) In your life outside of work</td>
</tr>
<tr>
<td>5. To what extent is support and advice available to you when you are experiencing difficulties?</td>
<td>a) In your work</td>
<td>7 6 5 4 3 2 1</td>
<td>b) In your life outside of work</td>
</tr>
<tr>
<td>6. To what extent is the quality of your relationships with others satisfactory?</td>
<td>a) In your work</td>
<td>7 6 5 4 3 2 1</td>
<td>b) In your life outside of work</td>
</tr>
<tr>
<td>7. To what extent do you feel emotional reciprocity from others?</td>
<td>a) In your work</td>
<td>7 6 5 4 3 2 1</td>
<td>b) In your life outside of work</td>
</tr>
<tr>
<td>8. To what degree are you satisfied with your personal relationships with the following people at work:</td>
<td>a) Supervisors</td>
<td>7 6 5 4 3 2 1</td>
<td>b) Co-workers</td>
</tr>
<tr>
<td>9. To what degree are you satisfied with your personal relationships with the following people and groups:</td>
<td>a) Partner</td>
<td>7 6 5 4 3 2 1</td>
<td>b) Family</td>
</tr>
</tbody>
</table>
Job discretion

Below are a number of statements that could be used to describe a job. Please read each statement carefully and indicate the extent to which each is an accurate or an inaccurate description of your job. (Please circle one number for each statement).

<table>
<thead>
<tr>
<th></th>
<th>Very little</th>
<th>Little</th>
<th>Moderate amount</th>
<th>Much</th>
<th>Very much</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>How much can you generally predict the amount of work you will have to do on any given day?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>How much can you choose among a variety of tasks to do?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>How much control do you have personally over how much work you get done?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>How much control do you have over the variety of methods you use in completing your work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>How much control do you have over the scheduling and duration of your rest breaks?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>How much control do you have over how quickly or slowly you have to work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>How much control do you have over when you come to work and when you leave?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>How much control do you have over when you take days off or holidays?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>How much control do you have over how your work is evaluated?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>How much are things that affect you at work predictable, even if you cannot directly control them?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11</td>
<td>How much control do you have over how you do your work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>How much can you control when and how much you interact with others at work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>How much control do you have over the policies and procedures in your work unit?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>How much can you control the physical conditions of your workplace (e.g. light, noise, temperature)?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>How much control do you have over the sources of information you need to do your job?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16</td>
<td>How much control do you have personally over the quality of your work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17</td>
<td>How much are you able to predict what the results of decisions you make on the job will be?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18</td>
<td>How much control do you have over the amount of resources you get?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19</td>
<td>How much can you control the amount of times you are interrupted while you work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20</td>
<td>How much control do you have over the amount you earn at your job?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21</td>
<td>How much are you able to decorate, rearrange, or personalise your work area?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22</td>
<td>In general, how much overall control do you have over work and work-related matters?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
Workload

These questions deal with different aspects of work. Please indicate how often these aspects appear in your job. (Please circle one number for each question)

<table>
<thead>
<tr>
<th>Question</th>
<th>Very often</th>
<th>Fairly often</th>
<th>Sometimes</th>
<th>Occasionally</th>
<th>Rarely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How often does your job require you to work very fast?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. How often does your job require you to work very hard?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. How often does your job leave you with little time to get things done?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. How often is there a great deal to be done?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Please answer the following questions by indicating how much they apply to your job.

<table>
<thead>
<tr>
<th>Question</th>
<th>A great deal</th>
<th>A lot</th>
<th>Some</th>
<th>A little</th>
<th>Hardly any</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. How much workload do you have?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. How many lulls between heavy work load periods do you have?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. How much time do you have to think and contemplate?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. What quantity of work do others expect you to do?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. How much time do you have to do all your work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. How many tasks or responsibilities do you have?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. How much slowdown in the workload do you experience?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Background

The remaining questions are designed to provide a background summary of the people taking part in this survey. Remember, no one other than the Deakin University researcher will have access to the information you provide here. Please tick one option for each question.

1. What is your approximate age?
   - 18-25 [ ]
   - 26-30 [ ]
   - 31-40 [ ]
   - 41-50 [ ]
   - >51 [ ]

2. What is your marital status?
   - Married [ ]
   - Long-term relationship [ ]
   - Single [ ]
Background (Cont.)

3. What is your current job title?
   ..............................................................................................................................

4. How many people report directly to you?
   ..............................................................................................................................

5. How many people indirectly report to you (excluding those from Q.4)?
   ..............................................................................................................................

6. How long have you been in your current position?
   (Please tick one box only)
   Less than 6 mths [ ]
   Between 6-12 mths [ ]
   1-2 years [ ]
   3-5 years [ ]
   6-10 years [ ]
   More than 10 years [ ]

7. How long have you been employed with the company/organisation you are currently working for? (Please tick one box only)
   Less than 6 mths [ ]
   Between 6-12 mths [ ]
   1-2 years [ ]
   3-5 years [ ]
   6-10 years [ ]
   More than 10 years [ ]

Thank you very much for taking the time to complete this questionnaire. Your input is greatly appreciated.

Please seal the questionnaire in the attached reply-paid envelope and return to the address provided.

If you have any queries about the content of this questionnaire, please contact Andrew Noblet at Deakin University on (03) 9251 7271.
Appendix C

Plain Language Statements for Study Two

Individual interview

Dear (Player)

I would like to invite you to take part in an interview to be held on XX November 1999. The interview is part of a research project aimed at identifying the stressors (factors that cause stress) experienced by AFL footballers.

I am undertaking this project as part of a PhD at Deakin University. The information you provide in this interview will be kept strictly confidential. Only myself will have access to this information. Other steps taken to protect the anonymity of the players and clubs involved in this study will be discussed in the following project outline. Two clubs have been invited to take part in this project. The results will inform the development of a questionnaire that will be used in a second study aimed at measuring the stressors experienced all AFL footballers.

The information you provide in this project will be enormously beneficial. From a research point of view, this project would help overcome a lack of information on the stressors that exist in professional sport. The study will be one of the first of its kind and, as such, will help professional sporting bodies world-wide develop more effective stress prevention strategies.

In the interview you will be asked to answer questions regarding the factors that cause you stress. That is, those things that make you feel frustrated, nervous, depressed, devalued or any of the other emotions related to stress. The interview will last approximately 45 minutes and, with your approval, will be recorded on audio-tape. I recognise that merely talking about the causes of stress can often create some discomfort. Generally, however, the nature of the questions will not create stress levels that go beyond that which you would encounter in your everyday life.

If you decide to become involved in this project, strict guidelines will be followed to ensure that your identity is kept confidential. Before the interview begins you will be given a coded name and the ‘key’ to this code will be kept separate from the interview records. No individual players, officials, or clubs will be named in any of the reports resulting from this project and all recorded information obtained through my enquiries will be kept in a locked office here at Deakin University. Should you wish to withdraw from the study, all relevant information will be deleted from my records. Upon the completion of the study your club will be sent a summary of the results.

If you would like to participate in the interview please complete the attached consent form and return to John (Player Development Manager). I will then contact you, via John, to arrange a suitable time for the interview to take place. In the mean time, if you require further information on the project, you can contact myself (ph. 9251 7271).

Should you have any concerns about the conduct of this research project, please contact the Secretary, Deakin University Ethics Committee, Research Services, Deakin University, Burwood Campus, 221 Burwood Highway, Burwood VIC 3125 Tel No (03) 9251 7123.

Thanks and I look forward to hearing from you soon.

Andrew Noblet
Focus group

Dear (Player)

I would like to formally invite you to take part in a group discussion to be held on Wednesday 18 November 1999 at 3pm. The discussion is aimed at identifying the types of stressors (factors that cause stress) experienced by AFL footballers.

I am undertaking this project as part of a PhD at Deakin University. The information you provide in this interview will be kept strictly confidential. Only myself will have access to this information. Other steps taken to protect the anonymity of the players and clubs involved in this study will be discussed in the following project outline. Two clubs have been invited to take part in this project. The results will inform the development of a questionnaire that will be used in a second study aimed at measuring the stressors experienced all AFL footballers.

The information you provide in this project will be enormously beneficial. From a research point of view, this project would help overcome a lack of information on the stressors that exist in professional sport. The study will be one of the first of its kind and, as such, will help professional sporting bodies world-wide develop more effective stress prevention strategies.

In the discussion group you and other participants will be asked to answer questions regarding the factors that cause you stress. That is, those things that make you feel frustrated, nervous, depressed, devalued or any of the other emotions related to stress. The group discussion will consist of 6-8 players from the club and will last approximately 45 minutes. With your approval, the discussion group responses will be recorded and later analysed. I recognise that merely talking about the causes of stress can often create some distress and discomfort. Generally, however, the nature of the questions will not create stress levels that go beyond that which you would encounter in your everyday life.

While other players who are taking part in the discussion groups will obviously be aware of your involvement, strict guidelines will be followed to ensure that, outside this group, your involvement is kept confidential. Before the interview begins you will be given a coded name and the ‘key’ to this code will be kept separate from the interview records. No individual players, officials, or clubs will be named in any of the reports resulting from this project and all recorded information obtained through my enquiries will be kept in a locked office here at Deakin University. Should you wish to withdraw from the study, all relevant information will be deleted from my records. Upon the completion of the study your club will be sent a summary of the results.

If you would like to participate in the group discussion complete the attached consent form and return to John (Player Development Manager). I will then contact you, via John, to arrange a suitable time. In the mean time, if you require further information on the project, you can contact myself (ph. 9251 7271).

Thanks and, hopefully, I’ll catch up with you later in the month.

Andrew Noblet
Appendix D

Questionnaire for Study Three

Stress in AFL Football Survey

This is an anonymous questionnaire. Please ensure that you do not write your name, or any other comments that will make you identifiable, on this questionnaire. Once you have completed this questionnaire, please seal it in the attached reply-paid envelope and return to the address provided.

This survey is being undertaken by Andrew Noblet, Deakin University
Ph: (03) 9251 7271

DEAKIN UNIVERSITY
What is this questionnaire about?

This questionnaire will be asking you questions about your job as an AFL footballer. Make sure you consider all aspects of your football life – that is, playing, training, rehabilitation, team meetings, feedback sessions, official club functions, promotional work and other aspects of your job as a footballer.

The information you provide will help identify areas where we can reduce the causes of stress while at the same time provide you with the knowledge and skills to cope with the demanding and sometimes stressful nature of AFL football.

This is an anonymous questionnaire. Please ensure that you do not write your name, or any other comments that will make you identifiable, on this questionnaire. By completing the questionnaire you are consenting to take part in this research. As such you should first read the attached letter carefully as it explains fully the objectives of this project.

Once you have completed this questionnaire, please seal it in the attached reply-paid envelope and return to the address provided.

If you have any queries about the content of this questionnaire, please contact Andrew Noblet at Deakin University on (03) 9251 7271.

Should you have any concerns about the conduct of this research project, please contact the Secretary, Deakin University Ethics Committee, Research Services, Deakin University, Burwood Campus, 221 Burwood Highway, Burwood VIC 3125 Tel No (03) 9251 7123.
Job satisfaction

The following set of items deals with various aspects of your job. I would like you to tell me how satisfied or dissatisfied you feel with each of these features of your job as an AFL footballer. (Please circle one number for each item)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Extremely satisfied</th>
<th>Very satisfied</th>
<th>Moderately satisfied</th>
<th>Unsure</th>
<th>Moderately dissatisfied</th>
<th>Very dissatisfied</th>
<th>Extremely dissatisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The physical work conditions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2.</td>
<td>The freedom to choose your own method of working</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>3.</td>
<td>Your fellow workers</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>4.</td>
<td>The recognition you get for good work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>5.</td>
<td>Your immediate boss</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>6.</td>
<td>The amount of responsibility you are given</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>7.</td>
<td>Your rate of pay</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>8.</td>
<td>Your opportunity to use your abilities</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>9.</td>
<td>Industrial relations between management and players in your club</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>10.</td>
<td>Your chance of promotion</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>11.</td>
<td>The way your club is managed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>12.</td>
<td>The attention paid to suggestions you make</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>13.</td>
<td>Your hours of work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>14.</td>
<td>The amount of variety in your job</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>15.</td>
<td>Your job security</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>16.</td>
<td>Now taking everything into consideration, how do you feel about your job as a whole?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>

General Health

Please answer this question by indicating how often you have recently……

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Not at all</th>
<th>No more than usual</th>
<th>Rather more than usual</th>
<th>Much more than usual</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.</td>
<td>Been able to concentrate on whatever you’re doing</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18.</td>
<td>Lost much sleep over worry</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19.</td>
<td>Felt that you’re playing a useful part in things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20.</td>
<td>Felt capable of making decisions about things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21.</td>
<td>Felt constantly under strain</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22.</td>
<td>Felt you couldn’t overcome your difficulties</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23.</td>
<td>Been able to enjoy your normal day-to-day activities</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24.</td>
<td>Been able to face up to your problems</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25.</td>
<td>Been feeling unhappy and depressed</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>26.</td>
<td>Been losing confidence in yourself</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>27.</td>
<td>Been thinking of yourself as a worthless person</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>28.</td>
<td>Been feeling reasonably happy all things considered</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Sources of stress

In this question you are asked to indicate the extent to which each of the following is a source of stress in your job as a footballer. (Please circle one number for each factor)

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Moderate source of stress</th>
<th>Major source of stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. High levels of competition between players</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Public scrutiny</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Lack of opportunity to play senior football</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Not sure what you’ll do for a job once your football career is over</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. Long training sessions</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6. Injury</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7. Not feeling a part of the team</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8. Criticism from members of coaching staff</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9. Restrictions on what you do in your personal life</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10. Unfair treatment from coaching staff</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11. Difficulty balancing football and other job and/or study commitments</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12. Problems with accommodation</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13. Not having any say in what happens at the club (ie. training content, on-field tactics, etc.)</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14. Lack of feedback on how you’re performing</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15. Constant pressure to perform to a high standard</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16. Inadequate salary</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17. Disagreements/conflict with coaching staff</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18. Disagreements/conflict with other players</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19. Feeling left out when injured</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20. Not knowing whether you’re going to be selected or not</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21. Lack of recognition for good work</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>22. Poor form</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>23. Possibility of being de-listed</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>24. Excessive attention from media</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>25. Lack of support when going through a form slump</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Support

I am interested in learning about some of the ways that you feel other people have helped you or tried to make life more satisfying for you – at the football club and outside the football club. Please circle the level of support you have received from others.

<table>
<thead>
<tr>
<th>1. To what extent do you get appreciation and recognition for what you do?</th>
<th>Very much</th>
<th>Moderate amount</th>
<th>Very little</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) In your work (i.e., at the football club)</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>b) In your life outside of work</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. To what extent are you able to share the burden with others in terms of your duties and responsibilities?</th>
<th>Very much</th>
<th>Moderate amount</th>
<th>Very little</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) In your work</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>b) In your life outside of work</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. To what extent do you receive feedback on your performance?</th>
<th>Very much</th>
<th>Moderate amount</th>
<th>Very little</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) In your work</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>b) In your life outside of work</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. To what extent are you able to take time off when you are under pressure?</th>
<th>Very much</th>
<th>Moderate amount</th>
<th>Very little</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) In your work</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>b) In your life outside of work</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. To what extent is support and advice available to you when you are experiencing difficulties?</th>
<th>Very much</th>
<th>Moderate amount</th>
<th>Very little</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) In your work</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>b) In your life outside of work</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6. To what extent is the quality of your relationships with others satisfactory?</th>
<th>Very much</th>
<th>Moderate amount</th>
<th>Very little</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) In your work</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>b) In your life outside of work</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. To what extent do you feel emotional reciprocity from others?</th>
<th>Very much</th>
<th>Moderate amount</th>
<th>Very little</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) In your work</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>b) In your life outside of work</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>8. To what degree are you satisfied with your personal relationships with the following people at work:</th>
<th>Very much</th>
<th>Moderate amount</th>
<th>Very little</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Coach</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>b) Other coaching staff</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>c) Support staff</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>d) Team-mates</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. To what degree are you satisfied with your personal relationships with the following people and groups:</th>
<th>Very much</th>
<th>Moderate amount</th>
<th>Very little</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Partner</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>b) Family</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>c) Friends</td>
<td>7</td>
<td>6</td>
<td>5</td>
</tr>
</tbody>
</table>
Job discretion

Below are a number of statements that could be used to describe a job. Please read each statement carefully and indicate the extent to which each is an accurate or an inaccurate description of your job as a footballer. Consider all aspects of your job – playing, training, team meetings, official club functions, promotional work, etc. (Please circle one number for each statement).

1. How much can you generally predict the amount of work you will have to do on any given day? Very little 2 Little 3 Moderate amount 4 Much 5 Very much

2. How much can you choose among a variety of tasks to do? 1 2 3 4 5

3. How much control do you have personally over how much work you get done? 1 2 3 4 5

4. How much control do you have over the variety of methods you use in completing your work? 1 2 3 4 5

5. How much control do you have over the scheduling and duration of your rest breaks? 1 2 3 4 5

6. How much control do you have over how quickly or slowly you have to work? 1 2 3 4 5

7. How much control do you have over when you come to work and when you leave? 1 2 3 4 5

8. How much control do you have over when you take days off or holidays? 1 2 3 4 5

9. How much control do you have over how your work is evaluated? 1 2 3 4 5

10. How much are things that affect you at work predictable, even if you cannot directly control them? 1 2 3 4 5

11. How much control do you have over how you do your work? 1 2 3 4 5

12. How much can you control when and how much you interact with others at work? 1 2 3 4 5

13. How much control do you have over the policies and procedures in your work unit? 1 2 3 4 5

14. How much can you control the physical conditions of your workplace (e.g., playing surface, gym temperature)? 1 2 3 4 5

15. How much control do you have over the sources of information you need to do your job? 1 2 3 4 5

16. How much control do you have personally over the quality of your work? 1 2 3 4 5

17. How much are you able to predict what the results of decisions you make on the job will be? 1 2 3 4 5

18. How much control do you have over the amount of resources (equipment, facilities) you get? 1 2 3 4 5

19. How much control do you have over the amount of times you are interrupted while you work? 1 2 3 4 5

20. How much control do you have over the amount you earn at your job? 1 2 3 4 5

21. How much are you able to decorate, rearrange, or personalise your work area? 1 2 3 4 5

22. In general, how much overall control do you have over work and work-related matters? 1 2 3 4 5
Workload

These questions deal with different aspects of work. Please indicate how often these aspects appear in your job as a footballer. Again, consider all aspects of your job, on and off the field.

<table>
<thead>
<tr>
<th></th>
<th>Very often</th>
<th>Fairly often</th>
<th>Sometimes</th>
<th>Occasionally</th>
<th>Rarely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How often does your job require you to work very fast?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. How often does your job require you to work very hard?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. How often does your job leave you with little time to get things done?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. How often is there a great deal to be done?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Please answer the following questions by indicating how much they apply to your job as a footballer.

<table>
<thead>
<tr>
<th></th>
<th>A great deal</th>
<th>A lot</th>
<th>Some</th>
<th>A little</th>
<th>Hardly any</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. How much workload do you have?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. How many lulls between heavy work load periods do you have?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. How much time do you have to think and contemplate?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. What quantity of work do others expect you to do?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. How much time do you have to do all your work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. How many tasks or responsibilities do you have?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. How much slowdown in the workload do you experience?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Background

The remaining questions are designed to provide a background summary of players taking part in this survey. Remember, no one other than the Deakin University researcher will have access to the information you provide here. Please tick one option for each question.

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is your approximate age?</td>
<td>18-20</td>
<td>[ ]</td>
<td>21-24</td>
<td>[ ]</td>
</tr>
<tr>
<td></td>
<td>25-28</td>
<td>[ ]</td>
<td>29-32</td>
<td>[ ]</td>
</tr>
<tr>
<td></td>
<td>&gt;33</td>
<td>[ ]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. What is your marital status?</td>
<td>Married</td>
<td>[ ]</td>
<td>Long-term relationship</td>
<td>[ ]</td>
</tr>
<tr>
<td></td>
<td>Single</td>
<td>[ ]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. How far do you live from the majority of your close family and friends?</td>
<td>within 100km’s</td>
<td>[ ]</td>
<td>100-300km’s</td>
<td>[ ]</td>
</tr>
<tr>
<td></td>
<td>&gt;300km’s</td>
<td>[ ]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Are you employed outside football?</td>
<td>Yes</td>
<td>[ ]</td>
<td>No</td>
<td>[ ]</td>
</tr>
</tbody>
</table>
5. Who do you play for?
(Please tick one box only)

<table>
<thead>
<tr>
<th>Club</th>
<th>[]</th>
<th>Club</th>
<th>[]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelaide</td>
<td></td>
<td>Melbourne</td>
<td></td>
</tr>
<tr>
<td>Brisbane Lions</td>
<td></td>
<td>North Kangaroos</td>
<td></td>
</tr>
<tr>
<td>Carlton</td>
<td></td>
<td>Port Adelaide</td>
<td></td>
</tr>
<tr>
<td>Collingwood</td>
<td></td>
<td>Richmond</td>
<td></td>
</tr>
<tr>
<td>Essendon</td>
<td></td>
<td>St Kilda</td>
<td></td>
</tr>
<tr>
<td>Fremantle</td>
<td></td>
<td>Sydney</td>
<td></td>
</tr>
<tr>
<td>Geelong</td>
<td></td>
<td>Western Bulldogs</td>
<td></td>
</tr>
<tr>
<td>Hawthorn</td>
<td></td>
<td>West Coast Eagles</td>
<td></td>
</tr>
</tbody>
</table>

6. How many senior games have you played for your current club?
(Please tick one box only)

<table>
<thead>
<tr>
<th>Range</th>
<th>[]</th>
<th>Range</th>
<th>[]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>101-150</td>
<td></td>
</tr>
<tr>
<td>1-10</td>
<td></td>
<td>151-200</td>
<td></td>
</tr>
<tr>
<td>11-25</td>
<td></td>
<td>&gt;201</td>
<td></td>
</tr>
<tr>
<td>26-50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>51-100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7. How many senior games have you played in your AFL career?
(Please tick one box only)

<table>
<thead>
<tr>
<th>Range</th>
<th>[]</th>
<th>Range</th>
<th>[]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>101-150</td>
<td></td>
</tr>
<tr>
<td>1-25</td>
<td></td>
<td>151-200</td>
<td></td>
</tr>
<tr>
<td>26-50</td>
<td></td>
<td>&gt;201</td>
<td></td>
</tr>
<tr>
<td>51-100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thank you very much for taking the time to complete this questionnaire. Your input is greatly appreciated.

Please seal the questionnaire in the attached reply-paid envelope and return to the address provided.

If you have any queries about the content of this questionnaire, please contact Andrew Noblet at Deakin University on (03) 9251 7271.
CONFERENCE PRESENTATIONS AND PUBLICATIONS ARISING FROM THIS THESIS

Conference Presentations Based on Peer-Reviewed Paper


Conference Presentations Based on Peer-Reviewed Abstract

Noblet, A., & Gifford, S: The Sources & Impact of Stress Experienced by AFL Footballers. Fifth IOC World Congress on Sports Sciences (Sydney), October 2000.

Publications: Accepted


Publications: Under Review

Noblet, A., Rodwell, J., & McWilliams, J. Assessing the Occupational Stress Experienced by Professional Australian Footballers Using an Augmented Job Strain Model. Paper accepted for review by the *Journal of Applied Sports Psychology*.
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Scanlan, T., Stein, G., & Ravizza, K. (1991). An In-depth Study of Former Elite Figure Skaters: III. Sources of Stress. *Journal of Sport & Exercise Psychology, 13*, 103-120.


