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**Living FIFO:
The Experiences and Psychosocial Wellbeing of Western Australian
Fly-in/fly-out Employees and Partners**

Anne M. Sibbel
Bachelor of Arts (Psychology, First Class Honours)
Diploma of Teaching (Primary)
A Thesis submitted in partial fulfilment of the requirements for the award of
Doctor of Philosophy
at the Faculty of Computing, Health and Science
Edith Cowan University
June 2010

USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

Abstract

Using a concurrent multi-methods design employing both quantitative and qualitative methodologies this study investigated the psychosocial wellbeing Western Australian fly-in/fly-out (FIFO) mining employees and their partners. The quantitative phase of the study assessed the psychological wellbeing, relationship satisfaction and perceptions of family function of 90 FIFO mining employees and 32 partners of FIFO employees using the General Health Questionnaire 12, the Dyadic Adjustment Scale and the Family Assessment Device. Analyses revealed that both FIFO employees and their partners are within the norms for healthy functioning on the scales and sub-scales of the measures of psychological wellbeing, relationship satisfaction and perceptions of family function, and that there were no statistically significant differences between the scores of the two groups on any of these measures. Further, there were no significant differences when data were analysed according to family type or profile of absence. Thus, despite perceptions that regular FIFO employment related absence would have adverse impacts on various aspects of wellbeing, the group of FIFO employees and partners in this study report similar levels of psychological wellbeing, relationship satisfaction and perceptions of family function to those of the general Australian population.

The qualitative phase used constructivist grounded theory methodology to explore the experiences of FIFO employees and partners of FIFO employees in order to develop an understanding and theoretical scheme of the role of contextual factors in their adaptation to the FIFO lifestyle. In-depth interviews were conducted with a medium sized sample of 16 FIFO employees and 12 partners of FIFO employees. The findings from the qualitative phase are discussed in light of existing literature and the findings from the quantitative phase.

The data revealed a number of individual, family, community and workplace factors that impact on individual experiences of and adaptation to the FIFO lifestyle. Informants generally made purposeful and informed choices to undertake FIFO employment based on the notion that “the benefits outweigh the costs”, that the lifestyle associated with FIFO employment would considerably increase individual and family access to financial and psychosocial resources, and that the net gains in personal and family resources would outweigh any losses. These findings challenge earlier presumptions that the regular absences associated with FIFO employment would result in a loss of individual and family resources and would impact negatively on the

psychosocial wellbeing of FIFO employees and their partners. The strengths and limitations of the study are outlined as are suggestions for future research. Implications of the findings at the individual, community, corporate and government levels are presented together with recommendations for future actions.

Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

- (i) Incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;
- (ii) Contain any material previously published or written by another person except where due reference is made in the text of this thesis; or
- (iii) Contain any defamatory material.
- (iv) Contain any data that has not been collected in a manner consistent with ethics approval.

Signature

Date June 2010

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I take this opportunity to acknowledge the very generous assistance and support given to me by many people throughout the long journey and without whom this thesis would not have been completed. Although much of this PhD was spent in front of a computer thinking, analysing and writing, it is the people who made the process achievable and in the end truly worthwhile.

My grateful thanks are extended to those fly-in/fly-out mining personnel and their partners who willingly participated in this study; your generosity in sharing your experiences and insights made this study possible. Thank you also to those mining companies who allowed me to approach their employees to be part of the project. I trust the shared experiences have been delivered meaningfully and with understanding.

I also thank my supervisors Dr Elizabeth Kaczmarek and Dr Paul Chang who willingly shared their expertise and knowledge throughout the research process. Elizabeth, in particular I want to thank you for your unfailing encouragement, support and advice. Our in-depth discussions have made this an extremely rewarding experience. Thank you Paul, for your careful reading and thoughtful comments and feedback of the project.

To my special friend and colleague Diane Broderick, thank you for being there, for encouraging me and having faith in me.

My thanks also go to my colleagues in the field of community psychology. Being part of a group which has its roots in social justice is inspiring and I value having had the opportunity to work with you all. We have chosen to work in a discipline of psychology that has much to contribute to ensuring the wellbeing of our communities, however community psychology is not widely recognised or understood in society and is thus underused and under-resourced. Our challenge is to make opportunities to share who we are and what we do.

And finally thank you to my wonderful family, Kate, Jocasta and Nicholas, their partners and children who unfailingly supported and put up with me throughout this process. In particular, to my ever patient, loving and supportive husband Frank, you have been so generous with your wide experience and knowledge of mining. You have

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Chapter 1

Setting the Context

This chapter sets the context of the study. First, the concept of the interaction between work and home lives, in conjunction with the general prevalence and impacts of non-standard working hours is introduced. Next, fly-in/fly-out employment is defined, and its history and current practice within the context of the Australian resources sector portrayed. The personal motivation for the study and its significance for the resources sector and the wider community are explained. Then community psychology, the discipline within which this study is contextualised, is described and the contribution of the study to the field is established. Finally, the structure of the thesis is provided.

Chapter 1

Setting the Context

Above all the mining fields were the stage and backdrop for hundreds of thousands of lives . . . (Blainey, 1994, p.2)

Introduction

An extensive field of research has demonstrated that as a result of social change, work and home are no longer viewed as separate worlds but as parts of life-systems that intersect and overlap and mutually influence each other (Bourg & Segal, 1999; Lewis & Cooper, 1999; Pitt-Catsouphes, Kossek, & Sweet, 2006; Pocock, Skinner, & Williams, 2007; Voydanoff, 2005). Changes in the composition of the workforce (e.g., increases in the number of dual earner families, single parents, and women in the workforce), working arrangements and the structure of families have resulted in the need to better understand the interrelationships between work and home/family life (Hosking & Western, 2008; Schultheiss, 2006). Research to date has examined issues associated with the nature of the relationship between work and home. For example, investigating how the overlap can lead to tensions resulting from the multiple time and task requirements faced by employees as they juggle work and family responsibilities and the demands of work and home life (Boles, Howard, & Donofrio, 2001; Thomas & Ganster, 1995).

Trying to maintain the balance between family and work has been shown to impact on both domains including the psychological wellbeing of personnel (Bedeian, Burke, & Moffett, 1988; Frone, Russell, & Cooper, 1992), job satisfaction (Adams, King, & King, 1996; Bacharach, Bamberger, & Conley, 1991; Bedeian et al.; Boles et al.; Bourg & Segal; Burke, 1994; Good, Grovalynn, & Gentry, 1988; Netemeyer, Boles, & McMurrian, 1996), turnover and intentions to turnover (Aryee, Fields, & Luk, 1999; Burke, 1988; Good et al. 1988; Grandey & Cropanzano, 1999; Greenhaus, Collins, Singh, & Parasuraman, 1997; Lyness & Thompson, 1997) and family relationships (Kossek & Ozeki, 1998). These impacts have been found across the employment types (Pocock et al., 2007) including blue collar workers (Babin & Boles, 1998), accounting and other professionals (Bedeian et al. 1988; Elloy & Smith, 2003) and managers (Carlson, Derr, & Wadsworth, 2003; Good et al. 1988), in police (Burke), nurses and engineers (Bacharach et al.), teachers (Netemeyer et al. 1996), retail (Good et al. 1988), female administration staff (Snow, Swan, Raghavan, Connell, & Klein, 2003), married

male naval personnel (Jones & Butler, 1980) and health care workers (Thomas & Ganster, 1995) amongst others.

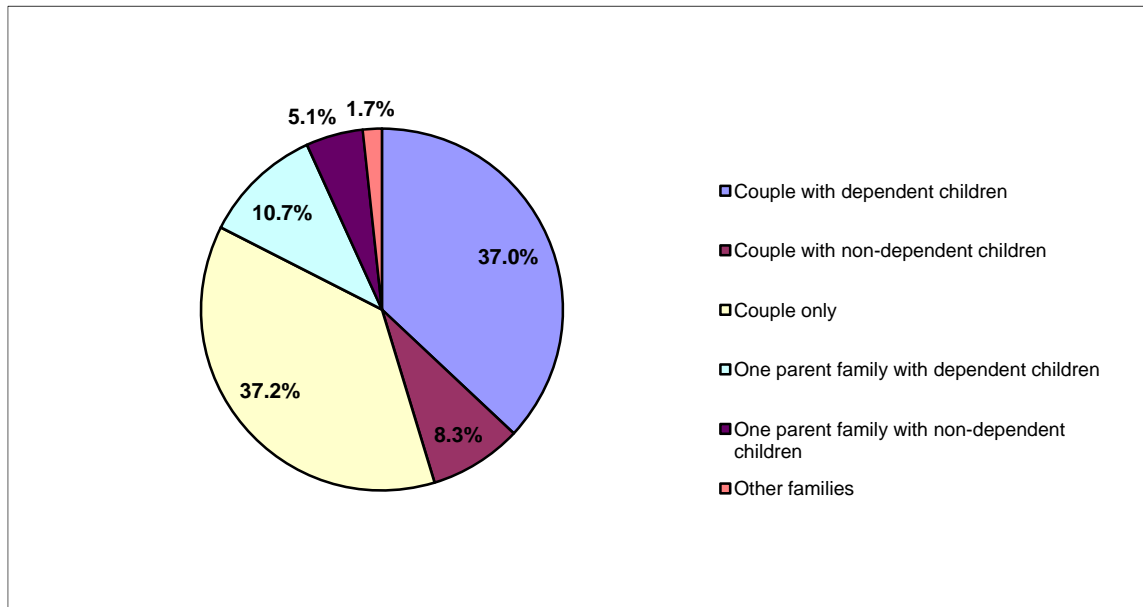
The interaction between the two spheres has variously been referred to as “work-family balance”, “work-family equilibrium” or “work-life collision” implying the need for some sort of balancing or juggling to successfully meet the competing demands of both domains and the “spill-over” effects between them (Hein, 2005; McKee, Mauthner, & Maclean, 2000; Pocock, 2003; Voydanoff, 2005). These terms focus on the degree of separation and conflict between the two spheres often without acknowledging the complex, overlapping individual, relational, cultural and other contextual factors that contribute to the interaction. In the style of Pocock, Skinner, and Williams (2007), and in acknowledgement of the systemic interactions between these contextual factors the present study uses the term ‘work-family interaction’ rather than those mentioned above.¹

Recent reviews of the literature (e.g. Allen, Herst, Bruck, & Sutton, 2000; Schulthies, 2006) identified that the majority of research on work and home lives has focused on the negative side of the interface investigating the occurrence, antecedents and consequences of work-family conflict (van Steenbergen, Ellemers, & Mooijaart, 2007). Few studies have investigated other areas such as how different work and family roles can benefit each other (Voydanoff, 2004a), on the interactions between work, families and communities including the impacts on social networks, social cohesion and social capital (Gallegos, 2006; Pocock, Skinner, & Williams, 2007) or the work family interactions for single individuals and minority groups (Pitt-Catsoupes, Kossek, & Sweet, 2006). Indeed, while employees and their families rely on paid work for sustenance, employers also rely on families and communities to provide and sustain the workforce, as such, these symbiotic roles require greater acknowledgement and understanding (Squire & Tilly, 2007; Voydanoff, 2004b).

Further, the work and family life literature has often concentrated on the traditional two parent family with dependent children to the exclusion of different family structures and those at other stages of the life course (e.g., single parent families or those couples with independent children). There have been substantial changes to the structure of Australian families over the last 20 years. As illustrated in Figure 1, Australian 2006 census data reveal that only 37.0% of families comprise a couple with

¹ See Pocock, Skinner & Williams (2007, p. 5) for a more detailed discussion of these terms.

dependent children, while 37.2% are couple families without dependent children, and 15.8% are sole parent families (Australian Bureau of Statistics [ABS], 2007a), thus highlighting the need for continuing work/family research that acknowledges these changes and includes a life course approach.



Note. Source: ABS (2007a), based on 5,219,165 families

Figure 1. Australian family types (ABS, 2007a)

An inclusive definition of family that recognises the current diversity of family structures in Australia was used for this thesis. Based on the definitions of Fassinger (2000) and Marks (2006) and congruent with the definitions used by the ABS (ABS, 2007a) family includes traditional two parent households (including shared biological, step or adopted children), single parent families, extended families, lesbian, gay and bisexual families, couples (married or cohabiting) without children, single people (usually networked with other households through kinship or “chosen” family) and other unions in which some form of home or family life exists.

Much of the work and family life research has taken a more traditional view of working hours and non-work life. That is, it has focused on the way in which the demands of fulltime employment in a standard 9-to-5 job, based on a five day week impact on accommodating family and other requirements (Wilson, Polzer-Debruyne, Chen, & Fernandez, 2007). However, the modern trend toward a 24-hour-society has

resulted in non-standard working hours such as shift work, weekend work and compressed work schedules, which in the past have been restricted to particular sectors such as nursing, mining and the military, becoming more prevalent and visible in the urban areas of Australia and other industrialized nations (Costa, 2003; Hosking & Western, 2008). The services (e.g., hospitals, police, security and utilities), hospitality (e.g., hotels and restaurants), retail (e.g., 24-hour fuel outlets and supermarkets) and industrial (factories and heavy transport) sectors all have extended these work options in response to increasingly flexible market demands (Department of Consumer and Employment Protection [DOCEP], 2004; Wilson, et al.). Working hours now more commonly include evenings, nights and weekends, and the hours of duty have become more variable with compressed shifts², split shifts³ and part-time work. Casual, on-call and fixed-term work contracts have also become more common. This diversification of work arrangements is a result of societal and organisational demands and individual preferences including an increase in the participation of women in the labour force (Hosking & Western; Presser, 2000).

To date in Australia, few studies have investigated the impacts of non-standard working arrangements on the wellbeing of employees and their families and the interaction of their work and home lives (Hosking & Western, 2008). Of those few that have been completed, many have focused on the impacts of different shift work systems on the psychological, social and physiological wellbeing of employees and their families working in industry sectors that have traditionally used shift arrangements (e.g., nursing, residential mining). Working night shift was found to have the most negative impacts on employees' wellbeing (Gent, 2004). In particular, the disturbance to normal circadian rhythms resulted in 'shift lag' syndrome, the symptoms of which (e.g., fatigue, digestive troubles, irritability and poorer mental agility) indirectly impacted on family and social interactions leaving some shift workers feeling "out of sync" with their families and local communities (Bohle & Tilley, 1989, 1998; Heiler, 1998, 2002; Presser, 2000). Furthermore, fathers who worked on weekends reported more work-family conflict than those who worked a "standard" Monday-to-Friday schedule (Hosking & Western, 2008).

² Compressed shifts refers to "the use of a set block of shifts of increased length to allow for shortening of the work week thereby providing extra days away from the workplace" (DOCEP, 2003, p. 46)

³ Split shifts refers to "when the work period is broken by an extended unpaid 'free' period, thereby constituting an extended working day consisting of two (or more) work periods" (DOCEP, 2003, p. 46)

Fly-in fly-out (FIFO) is a concentrated work schedule used extensively throughout the Australian resources sector (Chamber of Minerals and Energy Western Australia [CMEWA], 2008a). Not only are FIFO employees required to work long hours with inflexible, compressed work schedules, they are also separated from their homes and families on a regular basis, and many have shift arrangements while on site, thus potentially impacting on work and home interactions. The examination of how the particular combination of shift work and compressed work schedules impacts on the wellbeing of mining employees and their families has to date mainly focused on residential mine workers (see for example Heiler, 2002; Keown, 2005). We currently have a limited understanding of how individuals and families experience the FIFO lifestyle and its impact on their wellbeing (DOCEP, 2004).

FIFO Work Practices

The resources sector has traditionally been and continues to be a major contributor to Australia's economy and infrastructure. It is a major earner of export income, provides nation-wide employment and supplies the raw materials for the nation's basic industrial requirements (ABS, 2001, 2007b; Department of Industry and Resources [DOIR], 2007a). The infrastructure established to serve the mine sites has also contributed to the decentralisation of Australia's population and its industry (Blainey, 1994). Western Australia, in particular has vast oil, gas and mineral assets. In 2007 there were 560 commercial mineral projects including operating mine sites (open pit, underground and quarries), processing plants and oil and gas fields in operation (DOIR, 2008). During 2006, the Western Australian mining and petroleum sector employed more than 61,700 people directly and 216,000 people indirectly. The increase in direct employment in the mining industry from 1995 is displayed in Figure 2. Western Australia's share of national mining capital expenditure rose from 54% in 2005 to 61% in 2006 (DOIR, 2007b).

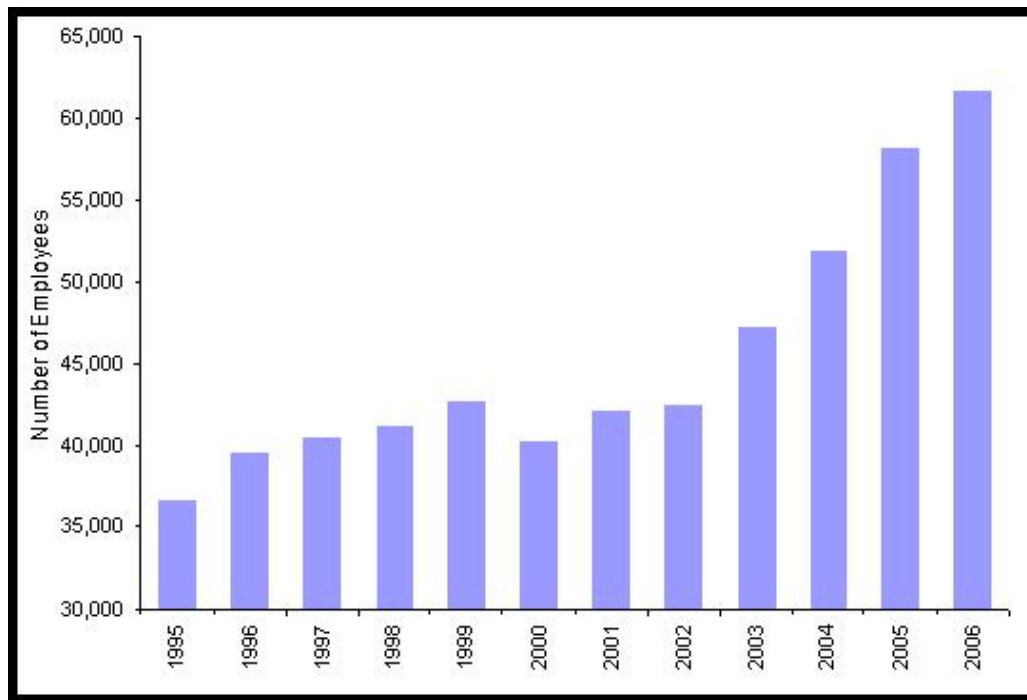


Figure 2. Number of People Directly Employed in the Western Australian Resources Sector (DOIR, 2007b).

The preference of the Australian population to live in proximity to the coast, coupled with the usually remote geographical location of Australia's natural resources has always posed a problem for the mining and petroleum industry (Storey & Shrimpton, 1991a) (see Figure 3 for the location of Western Australia's major mining projects). The resource sector traditionally resolved this issue by constructing mining towns near or at the mine or processing plant (e.g., Newman). More recently, however, changes in the structure of the mining industry, together with financing considerations and changes in the attitudes and aspirations of the mining workforce, have caused the long distance commute, more commonly known as fly-in/fly-out (FIFO), to emerge. FIFO has been used by the offshore oil industry since the 1950s but has only become common in the Australian land-based mining industry since the 1980s (Storey & Shrimpton, 1991b).

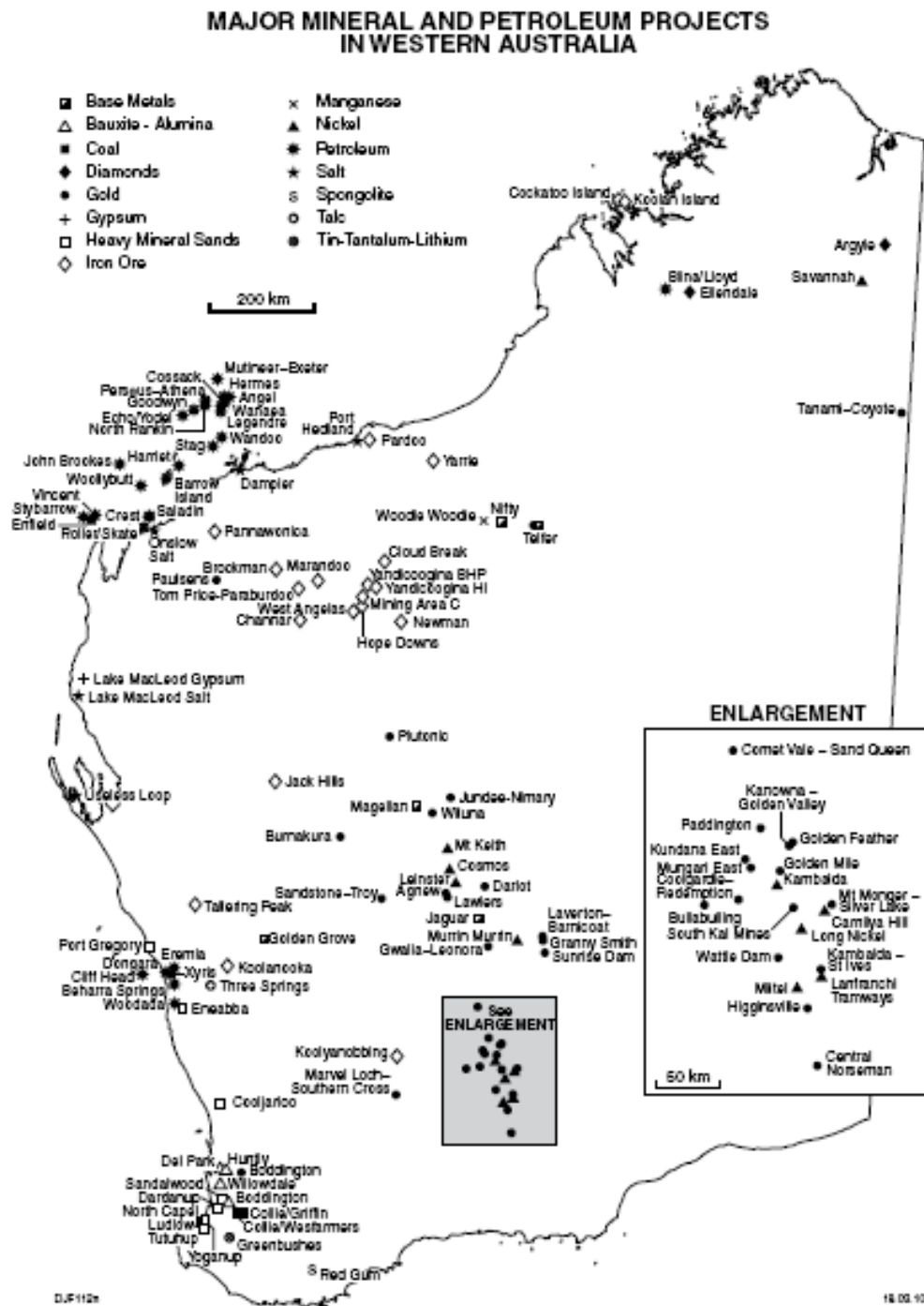


Figure 3. Major Mineral and Petroleum Projects in Western Australia (DMP, 2009).

An industry-accepted definition of FIFO operations is “those which involve work in relatively remote locations where food and lodging accommodation is provided for workers at the work site but not for their families” (Storey, 2001, p. 135). Workers spend a fixed number of days at the mine-site followed by a fixed number of days at home (Shrimpton & Storey, 1989). The employees usually commute from a home base located in a large city, coastal community or large established mining town (Gillies, Wu & Jones, 1997). Although flying is the most common form of transport for these commute arrangements, some Australian mine employees drive-in and drive-out (DIDO) from the mine using either company provided or private road transport. For the purposes of this report the term FIFO incorporates both FIFO and DIDO. Fly-in/fly-out is sometimes referred to as the Long Distance Commute (LDC) in international settings, but this term is not commonly used in Australia (Storey, 2001).

A number of factors, including improved communication and aircraft safety, lower employee absenteeism, access to a wider pool of potential employees and a preference for metropolitan living by many workers and their families continue to encourage the use of FIFO. In addition, other factors inhibit the further development of resource towns in remote locations adding to the attraction of the FIFO option (CMEWA, 2008a). These include the longer lead times and costs associated with new housing developments and construction, diminished financial and infrastructure support from government, the ecological footprint of large resource towns, and concerns for the sustainability of the town following the conclusion of the operation (Storey, 2001). Indeed, many smaller operations would not be viable without the economic benefits afforded by FIFO (CMEWA, 2005).

FIFO: The practice

The conditions of employment for FIFO employees such as shift and roster arrangements, accommodation facilities, availability of psychosocial support for individuals and families, and their terms of employment impact on how they experience the lifestyle and subsequently on their health and wellbeing (Keown, 2005). These conditions can differ according to the particular site setting, that is, the site location, employer and job type. For example, FIFO work arrangements vary in duration and symmetry and incorporate compressed work schedules in which FIFO employees work 10- or 12-hour shifts while “on site”. Many employees such as machinery and plant operators and their direct supervisors are also likely to have “shift” work in which they work a number of days of “day shift” followed by a number of nights of “night shift”. A

common pattern is one week of night shift, one week of day shift followed by one week at home. The proportion of time spent at home and at work depends on the symmetry of the work roster offered by the employer. Symmetrical rosters such as two weeks on site followed by two weeks at home (2/2) are more likely to be offered by offshore oil and gas companies, whereas asymmetrical rosters such as two weeks away followed by one week home (2/1) or nine days away followed by five days home (9/5) are more commonly offered by land-based mining companies (Watts, 2004). Roster patterns can vary in length from those such as five days away and two days home (5/2) to six weeks away and one week home (6/1) and variations in-between. Common rosters at the time of writing include two weeks away and one week home (2/1), nine days away and five days home (9/5) and increasingly eight days away and six days home (8/6). Many employees across the resources industry prefer the shorter rotation lengths such as 9/5 or 8/6, however contractor companies have tended to offer the longer rotations such as 2/1 (Watts).

FIFO employees can work for any one of a number of different types of companies found on a mine site and work conditions can vary between companies. While each site is different, a typical profile might be as follows. The “principal” company is the mining company that owns the lease and therefore all of the products from the mine, and its employees characteristically include all of the general managerial and administration staff and frequently those responsible for the operation of the processing plants as well. A number of contractor and sub-contractor companies also provide services to the site. These can include employees involved in the open pit or underground mining of the ore, maintenance of plant and machinery, and provision of catering, cleaning and transport services. Contractor company employees are more likely to move from site to site depending on the contracts their employer has with the different mining companies.

The accommodation facilities on the mine site are usually provided by the principal company, and the standard of individual rooms can vary. For example, rooms can have individual ensembles, shared ensembles or employees may have to use facilities in external shared ablution blocks. Contractor employees are more likely to be allocated the poorer standard rooms (Sibbel, Sibbel, & Goh, 2006). Availability of communication to and from home also varies across sites. Larger sites are more likely to have a mobile phone tower or perhaps land-lines in all rooms whereas smaller or more remote operations might only have a limited number of satellite lines thus limiting

availability of communication with home. Employees can be classified as staff or award depending on their position in the company. Mine staff are usually employed on an annual salary whereas operators may be on an award agreement or other individual workplace agreements. Employees may also be employed on a permanent basis, on a fixed term contract or on a casual basis. Some mine sites are located near regional towns and are able to offer their employees the choice of FIFO or residential arrangements (e.g., Newman, Kalgoorlie and Kambalda). FIFO accommodation for such sites may be located within the townsite offering FIFO employees access to town facilities such as shops, communication and sporting and social activities (Sibbel, et al.).

The support provided for employees and their families to manage the psychosocial impacts of a FIFO lifestyle varies between companies and from site to site, often depending on the size and profitability of the mine but also on the management style of individual mine managers (Sibbel, Sibbel, & Goh, 2006). Such support includes, for example, flexibility in roster options, availability of communication, both phone and internet, between home and site, and the provision of support materials for families (e.g. information booklets such as *Fly-in/fly-out families: Helpful ideas and tips for living a fly-in/fly-out lifestyle*). Those more remote minesites, for example, may only be able to offer limited satellite communication between home and site, whereas those sites located close to a large regional centre such as Kalgoorlie or Newman could have both land-lines and mobile phone connections as well as the internet thus facilitating easy and regular communication between FIFO employees and their families. Further, some positions (e.g., administrative roles) provide employees with phone and internet access as part of the job, thus providing opportunities for communication between these employees and their families during working hours, whereas others such as truck drivers might have more restricted access, only be able to access phones or the internet after their shift has finished. Similarly, the availability of different roster options can depend on the particular job requirements, on the availability of flights or the distance of the mine from, for example, Perth or a regional centre (CMEWA, 2008a; Sibbel, et al.).

Significance of this Study

The introduction of FIFO to the land-based mining industry led to much public and private debate about the relative merits of FIFO and residential mining employment, focussing in particular on the impact on the sustainability of regional towns and on the wellbeing of individuals and families (Bowler, 2001; Watts, 2004). Community perceptions regarding FIFO have been often stereotypical and negative. For

example, some public rhetoric has described FIFO as “the cancer of the bush”, a cause of “marriage break up” and “children running amok” (Loney, 2005). There has also been a tendency to attribute a wide range of problems to FIFO. Shrimpton and Storey (2000, p. 2) aptly describe this as the “attributability problem”, in which the image of FIFO leads to a tendency to attribute all problems to it when in reality the issues are more complex and there are many other influences on people's lives and wellbeing such as stage in the family life cycle, availability of social support or the presence of pre-existing issues (Sibbel, 2004). Both residential and FIFO mining lifestyles offer different benefits for and challenges to the wellbeing of employees and their families depending on their particular needs at different stages in their lives, for example, FIFO allows access to a wider choice of education and health facilities for families with school aged children, while residential employment allows parents to be home every night and share the “first steps” of babies and toddlers (Sibbel & Kaczmarek, 2005; Watts, 2004).

In resource-rich Western Australia many people will continue to have the option of FIFO employment for the foreseeable future. As a result of the ongoing growth in the resources sector the state has more than 78 mining operations that use FIFO arrangements (Richard Price, personal communication, March, 2008) compared with 38 in 2001 (Department of Minerals and Energy [DME], 2001). Interestingly, the proportions of FIFO and residential mining employees from 2003 to 2006 have remained relatively stable as shown in Figure 4, (CMEWA, 2008a) compared with 100% residential in the 1970s (CMEWA, 2005).

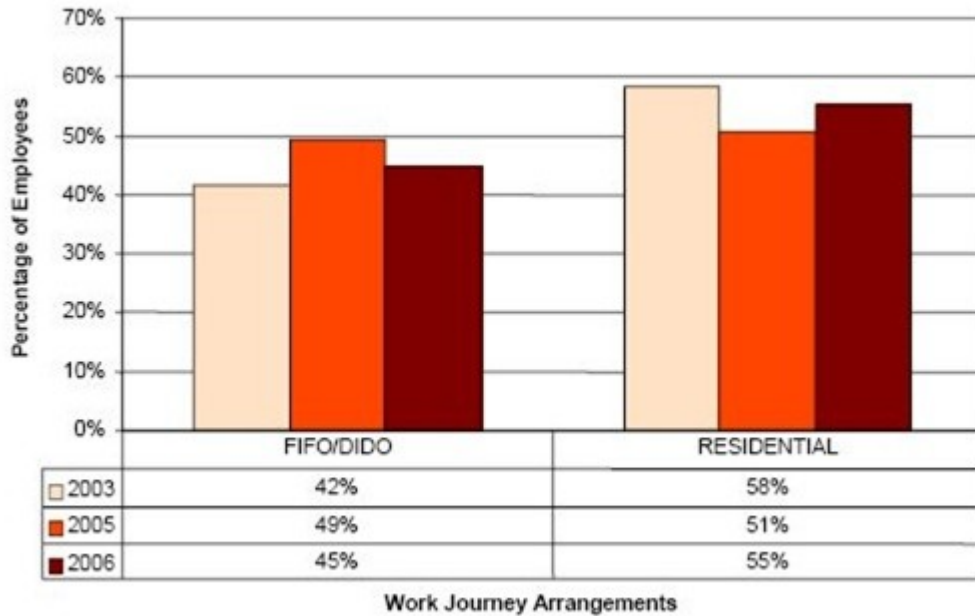


Figure 4. Proportions of FIFO and Residential Employees 2003 - 2006 (CMEWA, 2008a)

Although FIFO has become increasingly common in mining industry over the past 20 years, there has been only a small number of Australian research studies on the psychosocial impacts of this employment practice, and consequently our understandings are limited (CMEWA, 2005; Reynolds, 2004). Government agencies, non-government agencies, the mining industry and the wider community have expressed the need for more research in this area (CMEWA; Lambert, 2001; Watts, 2004). Thus, this study sought to respond to this need by investigating the psychological, relational and family wellbeing and the factors that contribute to this wellbeing of a group of FIFO employees and their partners across the life-cycle. The results of this study will help provide a better understanding of the impacts of FIFO employment on the wellbeing of mining employees and their families which in turn may enable employers and other policy makers to develop policies and instigate strategies to further support and strengthen these individuals and their families. Supportive employee and family policies can result in healthier families and communities, higher productivity and safety, lower absenteeism, lower staff turnover and greater organisational commitment (Behson, 2002; Boles, Howard & Donofrio, 2001; Bourg & Segal, 1999).

Personal Motivation for the Study

In addition to the contribution to academic understandings, the choice of research topic for some researchers can also be prompted by personal experience (Creswell, 1998; Crotty, 1998; Patton, 2002; Prilleltensky, 1997). The selection of the

current research topic was in part motivated by my personal experiences as the wife of a FIFO employee during the early 1990s. As FIFO became increasingly common in the mining industry during the 1990s and early 2000s I began to wonder how others were experiencing the lifestyle and if there were particular ways in which psychological understandings could contribute to support for FIFO families. My reading in the area established that very little research undertaken with Australian FIFO families has been published in the public domain. The majority of understandings were based on survey research undertaken with North American and Canadian mining and North Sea oil FIFO employees and their partners (e.g., Collinson, 1998; Lewis, Porter, & Shrimpton, 1988; Morrice, Taylor, Clark, & McCann, 1985; Storey, Shrimpton, Lewis, & Clark, 1989). The impact of working conditions of the North Sea offshore oil platforms on the physical and psychological wellbeing FIFO employees was also investigated using empirical measures of wellbeing (e.g., Parkes, 1999; Parkes & Clark, 1997). Other researchers had drawn on the experiences of employees from other industries that required their employees to be away from home on a regular basis such as the military (e.g., Finkel, Kelley, & Ashby, 2003; Jensen, Grogan, Xenakis, & Bain, 1989; Kelley, Hock, Bonney, Jarvis, Smith, & Gaffney, 2001) and transport industries (e.g., Foster & Cacioppe, 1986; Jupp & Mayne, 1992; Parker, Clavarino, & Hubinger, 1998; Parker, Hubinger, Green, Sargent, & Boyd, 1997; Rosenfeld, Rosenstein, & Raab, 1973; Sutherland & Flin, 1989). These findings did not fit with my personal experiences of FIFO within the Australian context. Further, as a community psychologist it seemed inappropriate to try understand the unique experiences of Australian FIFO employees in terms of employees from other countries and other industries. A thorough understanding of the Australian experience of FIFO could only be achieved using a contextual approach to the research (Duffy & Wong, 2003; Thomas & Veno, 1996). Consequently, I decided to investigate the experiences of FIFO employees and their partners within the Western Australian context using a multi-methods approach as detailed in Chapter 4, with the quantitative component to establish the levels of psychological, relational and family wellbeing of FIFO employees and their families, and the qualitative section to explore their particular experiences of the FIFO lifestyle that contribute to their wellbeing, thus providing an indepth understanding of the impacts of FIFO employment.

The Western Australian resources industry includes the offshore oil and gas and land-based mining sectors. Each provides different employment settings and conditions

for their employees and families. Within the land-based mining sector the employment context depends in part on the type of ore being mined and the size of and projected life on the mine. In particular, there are differences between the iron ore, coal and base metal sectors. In acknowledgement of these differences, this study focuses particularly on the experiences of employees and their partners from medium-sized metalliferous mines located in the Goldfields-Esperance region of Western Australia. I chose this profile of land-based mining because of personal experience in the area and because of the increasing number of people being attracted to FIFO employment in this region.

Community Psychology

Community psychology is a field of psychology which “emphasises the context, culture and socio-political structures within which groups and individuals function” (Gridley, Fisher, Thomas & Bishop, 2007, p. 15), focusing on the strengths and competencies of community members. The principals of flexibility, equity and respect for diversity guide the practice of community psychology. It emerged in Australia during the 1980s having originated in North America during the 1960s in response to concerns with mainstream psychology (Rappaport, 1977; Sarason, 1981), and in recognition of the need to address issues of social change (Bishop, Sonn, Drew, & Contos, 2002). Using an ecological systems metaphor, community psychology incorporates various levels of analysis, from the individual to families and the community in its promotion of wellness, with its focus on prevention rather than treatment, and its concern with the wellbeing of society as a whole (Cowen, 1991; Kelly, 1990; Prilleltensky, 2001; Prilleltensky & Nelson, 1997). In this context wellbeing is “defined as a favourable state of affairs, for individuals, and communities, brought about by the presence of psychological and material resources” (Prilleltensky, 2001, p. 750). Wellbeing is not just absence of illness, but includes both psychological and physical components that in turn are dependent on various individual, social, economic and political factors (Cowen, 1994; Cowen, 1996; Keyes, 2007; Prilleltensky & Nelson, 1997). Investigation into the wellbeing of FIFO employees and their partners therefore requires a determination of not only their levels of wellbeing, but also an understanding of those individual, relational, employer and other contextual factors which contribute to their adaptation to the lifestyle.

Contribution of study to community psychology

As discussed earlier, the current global economic climate and in particular, the continuing rapid industrial development in China and India, has resulted in exceptional

growth in the Australian resources industry and a subsequent substantial increase in the number of people choosing a FIFO lifestyle (CMEWA, 2007). The experiences and impacts of FIFO and its contribution to the wellbeing of individual employees, their families, communities and society as a whole is poorly understood. The principles of community psychology with their emphasis on an integrated approach using multi-methods and ecological systems perspectives that are sensitive to social context and diversity, provide an appropriate basis for guiding this research into the complex area of the impacts FIFO employment. Moreover, not only do FIFO employees and their families constitute a discreet community, their wellbeing contributes to the wellbeing of the Australian society as a whole (Prilleltensky & Nelson, 2002; Rappaport, 2005).

This study contributes to the field of community psychology in Australia in general and Western Australia in particular. It extends community psychology's engagement with natural resources management from the environmental and social impacts of natural resource allocation to include the wellbeing of those employed within the resources sector in a FIFO capacity and the families and communities of which they are part (Bishop & D'Rosario, 2002; Bishop, Sonn, Drew, & Contos, 2002).

Western Australia arguably has the highest proportion of FIFO employees per head of population in the world (CMEWA, 2005). Despite the recent downturn in the global economy, the Western Australian minerals and petroleum industry has achieved an average annual growth of 15% over the last 10 years and forecasts continuing expansion and widespread use of FIFO employment (DMP, 2010). Thus, this study will have relevance for and contribute to community psychology's current and ongoing involvement with the wellbeing FIFO employees, their families and communities. More broadly, this study could contribute to the development of company and social policy in the wider areas of the work/family interface and non-standard working arrangements (CMEWA, 2005).

Structure of the Thesis

The thesis has the following structure. Chapter 2 provides a review of the relevant literature exploring the interface between the work and home/family domains. Chapter 3 reviews the work-family interface literature which relates specifically to the impacts of work related absence and FIFO working arrangements on individual and family wellbeing and relationship satisfaction. The theoretical and methodological framework of the thesis is described in Chapter 4, with an explanation of the research methods employed and the justification of these decisions. A detailed description of the

quantitative research process and discussion of the findings is provided in Chapter 5 and the qualitative phase is presented in Chapter 6.

Chapter 7 includes the qualitative findings, integrating these with the results of the qualitative phase. Finally, Chapter 8 presents recommendations at the individual, corporate, government and community levels. It includes a summary of the findings and the limitations for the study, suggestions for future research and the concluding words.

Chapter 2

Work Life, Home Life and Wellbeing

This thesis is premised on the understanding that work and home are no longer viewed as separate worlds but as parts of life-systems that intersect, overlap and mutually influence each other. The following chapter presents a review of literature on the work family interface and different models and approaches for understanding these processes, and discusses the implications of the findings for investigations into the impacts of FIFO working arrangements on employees and their families.

Chapter 2

Work Life, Home Life and Wellbeing

Introduction

“The work-family interface consists of relationships between characteristics in the work (family) domain, and activities, attitudes, and interpersonal relationships in the family (work) domain” (Voydanoff, 2004a, p. 275), and successfully managing this interface can be a challenge for individuals, families and organizations (Kossek & Ozeki, 1998).

As referred to in Chapter 1, extensive empirical and theoretical studies have examined these relationships and their impacts on work and home lives from a number of different perspectives (Allen, Herst, Bruck & Sutton, 2000; Behson, 2002; Lu, Kao, Chang, Wu, & Cooper, 2008; O’Driscoll, Brough & Kalliath, 2006). This research has been undertaken by a diversity of disciplines including psychology (e.g., organisational, clinical, counselling and occupational health), business (e.g., Human Resources, Occupational Health and Safety), social work and sociology, each focussing on different issues and outcomes. For example, organisational psychologists and human resource researchers are more likely to consider work related outcomes, whereas counselling psychologists might concentrate on family-related outcomes such as adaptive strategies used to integrate work and family lives (Voydanoff, 2007).

This range of approaches highlights the complexity of issues associated with the work-family interface, and the number of disciplines for whom the area has relevance and interest. However, it has also resulted in a lack of theoretical focus, and knowledge that is somewhat fragmented (Voydanoff, 2007; Westman & Piotrkowski, 1999). In fact, despite the voluminous research undertaken, many questions remain about causal precedence and domain specificity of the relationships between stressors, work-family interface outcomes, and moderators of these outcomes (Sikora, Moore, Grunberg, & Greenberg, 2007). This lack of a comprehensive theoretical framework is related to a number of research design issues. For example, the majority of the studies have been quantitative in design thus limiting our understandings of individual experiences. In addition, a wide variety of measures including self report scales developed specifically to measure antecedents or outcomes of work-family interactions (e.g., Kopelman, Greenhaus, and Connelly’s [1983] four-item scale), adaptations of these scales, study-generated measures (e.g., Weirisma & Van Den Berg, 1991) or more general measures of wellbeing (e.g., GHQ 12 [Goldberg & Williams, 1991]), and job (e.g., Job

Satisfaction Scale [Warr, Cook & Wall, 1979]) or marital satisfaction (e.g., Dyadic Adjustment Scale [Spanier, 2001]) have been used to measure various aspects of the work-family interface. The measure used depends on the researcher's particular discipline, preference and the population and aspects of the work-family interface under examination (Allen et al. 2000). Moreover, a number of studies examined particular work contexts (i.e., at a certain work place or with a specific employment group), or used homogenous samples (e.g., dual earner couples) thus limiting the generalisability of the results (Westman & Piotrkowski). Furthermore, most of these studies were cross-sectional in design and focused on particular individual outcomes rather than wider systems effects such as those on the family or the community (e.g., Allen et al.; Zimmerman, Haddock, Current & Ziemba, 2003), and only a small number have developed models of the processes of work-family interaction (e.g., Greenhaus & Powell, 2006; Voydanoff, 2004b;).

Despite the diversity of disciplines investigating this area, to date, much of this research has also focussed on employees working standard working hours (Boyar, Maertz, Pearson & Keogh, 2003). The current broadening of diversity in working arrangements, together with changes in composition of the workforce, and structure of families has resulted in the need to expand our understanding of these interrelationships (Schultheiss, 2006; Voydanoff, 2005), particularly the impacts of increasingly common non-standard work practices including casual and fixed-term contracts or intensive work arrangements such as FIFO, on individual, relationship and family wellbeing (Hosking & Western, 2008; Pocock, Skinner & Williams, 2007). The standard work schedule sixty years ago was eight hours a day, five days a week, Sunday work was limited and work undertaken outside of these hours attracted penalty rates of pay (Costa, 2003). Changes in the global economy, competition between developed and developing nations, and local demands for extended business operating hours have led to more flexible working arrangements and the deregulation of working schedules thus impacting on when people work (Strazdins, Clements, Korda, Broom & D'Souza, 2006). Currently more than half of Australia's labour force works hours other than the standard nine-to-five week days, and more than 73% of fathers have non-standard working arrangements (Baxter, Gray, Alexander, Strazdins, & Bittman, 2007). The number of mothers participating in the workforce, especially in part-time positions, continues to increase and dual earner families have become the most common family form in Australia (Gray, Qu, de Vaus, & Millward, 2003; Renda, 2003). These figures

imply the need for work family interface research to focus more on the impacts of non-standard working arrangements on diverse family groups.

This chapter first reviews the work-family interface literature, including determinants and outcomes of work-family interference and facilitation, and the roles of moderating variables and access to resources. Next, current research directions, including the use of ecological systems approaches (Bronfenbrenner, 1986) and the Conservation of Resources (COR) framework (Hobfoll, 2002), which allow a better understanding of the impacts of work-family interactions and the role of resources and moderating variables, are presented. Finally, the implications of these findings for investigation into the impacts of FIFO working arrangements on employees and their families are discussed.

The Interface Between Work Life and Home Life

Work and home life were originally regarded as separate unconnected domains that did not impact on each other and earlier studies investigated them as such, however more recent research has recognised that although the two fields are distinct, they are interconnected with bidirectional impacts that take place across their boundaries (Kossek & Ozeki, 1998). These “spillover effects” between work and home lives have been widely investigated from organisational and individual employee perspectives, and to a lesser extent, family viewpoints (Allen, et al., 2000; O’Driscoll, Brough & Kalliath, 2006; Voydanoff, 2004a). Although both negative (work-family conflict or interference) and positive (work-family facilitation) spillover effects are recognised, research to date has particularly focused on the antecedents and consequences of conflict, or interference between these two domains, rather than on the role of moderating variables or the beneficial ways in which work and family can support or enhance each other (Frone, 2003).

Work-family interference processes

Greenhaus and Beutall’s (1985) conceptualization of work-family conflict as “a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect” (p.77) is regarded by many as the seminal definition in this area, and as such, underpins much of the work-family interference research (Wayne, Grzywacz, Carlson & Kacmar, 2007). Based on the role scarcity hypothesis⁴ (Goode, 1960), and role theory (Katz & Kahn, 1978) this model proposes

⁴ See Goode (1960) and Sieber (1974) for further discussion of role theory

that work-family conflict can arise when an individual has to perform multiple roles as a worker, spouse, parent and community member, the demands of which require the commitment of finite time, psychological and other resources. Roles are defined as “a pattern of expectations which apply to a particular social position” (Sieber, 1974, p. 569). A stressful appraisal by individuals that these demands exceed their available resources can result in conflict between these competing demands (Voydanoff, 2004a). Accordingly, the demands and strain from one domain can spillover and impact on wellbeing and performance in the other domain. The degree of strain experienced can be mediated by the value and meaning an individual puts on a particular role (Greenhaus & Beutell). For example, despite having what might appear as substantial family demands, a mother working outside of the home might experience minimal work-family conflict if she has low attachment to the family role and has transferred that role to others (Thornwaite, 2002).

Two distinct constructs of work-family interference, each of which has independent antecedents and outcomes, have been identified based on the direction of the interference, namely work to family conflict and family to work conflict (Frone, Russell, & Cooper, 1992; Netemeyer, Boles & McMurrin, 1996). Work to family conflict is “inter-role conflict in which the general demands of, time devoted to, and strain created by the job interfere with performing family-related responsibilities” (Netemeyer et al., 1996, p. 401), for example working long hours prevents performance of home duties (Kinnunen & Mauno, 1998). On the other hand, family to work conflict refers to interference with work responsibilities that result from time demands and strain associated with home and family responsibilities such as when child illness prevents attendance at work (Frone et al., 1992). Work to family interference has been found to be more common than family to work interference for both women and men (Frone et al., 1992; Kinnunen & Mauno, 1998; Pocock, Skinner, & Williams, 2007), suggesting that family boundaries may be more permeable than work boundaries (Carlson & Frone, 2003). That is, it may be more “socially acceptable” to allow work to interfere with family than the other way around (Brotheridge & Lee, 2005). Despite description of the work-family interface as a reciprocal system, in general, more research has been conducted with work to family interference than family to work interference (Kossek & Ozeki, 1998). This research has particularly focused on the determinants and outcomes of work-family interference and an overview of the findings is presented in the following sections.

Work-family interference antecedents

According to Greenhaus and Beutell (1985) the key determinants of work-family conflict can be categorised into three main types, namely; time-based, strain-based and behaviour-based. Work-related time based pressures shown to be associated with conflict between work and home roles include the number of hours spent at work, inflexible work hours, shift work and overtime, and the degree to which people identify with and centre their interests around work (Baxter et al., 2007; Byron, 2005; Ettner & Grzywacz, 2001; Judge, Boudreau, & Bretz, 1994; Parasuraman, Purohit, Godshalk, & Beutall, 1996). For example, in their examination of work-family impacts on Australian families with young children Baxter et al., (2007) found fathers working more than 55 hours per week reported higher levels of work-family strain. On the other hand, home-related time pressures mainly centre on family demands such as household duties and child or elder care (Baltes & Heydens-Gahir, 2003; Frone, Russell, & Cooper, 1992). Such time based pressures can also occur when an individual is physically present in one domain but mentally preoccupied in the other, thus making it difficult to fulfil particular role obligations (Greenhaus & Beutell, 1985). Strain refers to those work and home factors which can result in psychological stress and tension spilling over from one domain into the other (O'Driscoll, Brough, & Kalliath, 2006). For example, negative emotional reactions to work situations might result in irritability towards family members in the home setting. Antecedents found to be related to such work-related stress include work role ambiguity and perceptions of work overload (Hobson & Beach, 2000; Kahn & Byosiere, 1992), while home and family related antecedents that have been linked to strain include marital and parental conflict (Byron, 2005). For example, Rantanen, Kinnunen, Feldt, and Pulkkinen (2008) found in their longitudinal study of work-family conflict and psychological wellbeing, that within a one-year time lag, low marital adjustment preceded high psychological distress.

Behaviour based determinants of work-family interference occur when behavioural expectations in one domain are perceived as incompatible with behavioural expectations in the other domain resulting in behaviourally based conflict. Thus norms and role expectations at work might be incompatible with those expected in the home and family based setting (Carlson & Frone, 2003). For example, successful job performance might require aggressive, task-oriented actions, while home roles require loving, supportive behaviours (O'Driscoll, Brough, & Kalliath, 2006).

A number of studies (e.g., Aryee, Fields, & Luk, 1999; Carlson & Kacmar, 2000) have provided empirical support for Greenhaus and Beutell's (1985) model of work-family conflict and the bidirectional nature of the effects (Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005; Pocock, Skinner, & Williams, 2007), however, the majority of research to date has focused on strain and/or time based conflict, and only a few studies (e.g., Carlson & Kacmar, 2000; Stephens & Sommer, 1996; van Steenbergen, Ellemers, & Mooijaart, 2007) have included the behavioural component of Greenhaus and Beutell's model of work-family interference.

Work-family interference consequences

Allen, Herst, Bruck, and Sutton (2000) identified three groups of consequences of work-family conflict, namely work-related outcomes (e.g., job satisfaction, commitment and turnover, absenteeism), non-work related outcomes (e.g., marital and life satisfaction, family function) and stress-related outcomes (e.g., psychological strain, depression, burnout, work and family stress). In relation to work-related outcomes, conflict between work and family has been associated with impacts such as lower job satisfaction, together with lower organizational attachment and commitment for individuals. For example, Greenhaus, Collins, Singh, and Parasuraman (1997) found increased levels of work-family conflict were positively related to intentions to leave the organisation. Non-work related negative outcomes include lower levels of life, relationship and family satisfaction. Although many studies have found a negative relationship between life satisfaction and work-family conflict (e.g., Aryee et al., 1999; Bedeian et al., 1988; Netemeyer et al 1996), some earlier studies such as Cooke and Rousseau (1988) found a non-significant relationship.

Stress related outcomes of work-family conflict include increased burnout, increased psychological (e.g., depression and anxiety) and physiological (e.g., headaches and insomnia) distress, and increased relationship stress amongst others (Allen et al.; Byron, 2005; Ford, Heinen, & Langkamer, 2007; Kossek & Ozeki, 1998; Mesmer-Magnus & Viswesvaran, 2005). Recent reviews and meta-analyses of the work-family literature (e.g., Allen et al., 2000; Byron, 2005; Ford, Heinen, & Langkamer, 2007; Kossek & Ozeki, 1998; Mesmer-Magnus & Viswesvaran, 2005) concluded that regardless of the direction of influence measured (i.e., work to family, or family to work) and despite some mixed results, a negative relationship frequently exists between work-family conflict and various indicators of work, family and life satisfaction and wellbeing. The inconsistency in some findings was attributed to issues

such as differences in populations under investigation, the use of different types of measures and changes in expectations of individuals and families during the last 20 years (Allen, et al., 2000).

Although fewer studies have investigated consequences within the family domain, there is evidence that work-family conflict has resulted in poorer parenting and perceptions of increased family dysfunction (MacEwan & Barling, 1994). In some studies married or partnered employees were more likely to experience work-family conflict than single workers (Lu, Kao, Chang, Wu & Cooper, 2008). Furthermore, the presence, age and number of children were associated with the degree of strain. Parents experienced greater work-family conflict than non-parents, as did those with young children compared with couples with grown children (Beutell & Greenhaus, 1980; Rothausen, 1999). Pocock, Skinner and Williams (2007) for example, found in their study of Australian families that people with more caring responsibilities such as those with younger children (under 4 years), or more children (more than 2 children) had worse work-life outcomes, while those younger than 34 or older than 55 years had better outcomes than did those in between these years. In addition, the combination of long working hours and long daily commute resulted in especially negative work-life spill-over effects. The key antecedents and outcomes of work-family interference are summarised in Table 1.

Thus, as individuals attempt to integrate their work and home lives their perceptions of insufficient resources to successfully fulfil work, family and community roles have been associated with job and family dissatisfaction, work and family tension, depression, and life stress (Beutell & Wittig-Berman, 1999; Boyar, Maertz, Pearson, & Keogh, 2003; Burke, 1988; Frone, Russell, & Cooper, 1991; Greenhaus, Collins, Singh, & Parasuraman, 1997; Kinnunen & Mauno, 1998; Squire & Tilley, 2007).

Table 1

Key antecedents and outcomes of work-family interference

Antecedents	Outcomes
Time-based	Work-related
Work-related	<ul style="list-style-type: none"> • Job satisfaction • Work performance • Work commitment • Turnover • Organisational commitment
<ul style="list-style-type: none"> • Inflexibility • Shift work • Evening and weekend work • Overtime • Job involvement • Work support 	
Home-related	Home-related
<ul style="list-style-type: none"> • Household duties • Child/elder care • Family support 	<ul style="list-style-type: none"> • Life satisfaction • Relationship satisfaction • Family function
Strain-based	Stress-related
Work related	<ul style="list-style-type: none"> • Psychological wellbeing • Burnout • Family stress • Physical wellbeing
<ul style="list-style-type: none"> • Work role ambiguity • Work role overload • Work role conflict 	
Home-related	
<ul style="list-style-type: none"> • Relationship conflict • Parental conflict 	
Behavioural-based	
<ul style="list-style-type: none"> • Family stress • Incompatible role expectations 	

Work-family facilitation

In contrast to the notion of work-family conflict is the concept that work and family are interdependent and complementary, where involvement in one domain can

beneficially influence functioning in the other domain and is not an inevitable source of stress and strain (Hill et al 2007; Werbel & Walter, 2002). Proponents of this perspective have shifted the focus to concentrate on the adaptive strategies families use to integrate their work and family lives (Zimmerman, Haddock, Current & Ziembra, 2003). Others have proposed a number of different constructs to explain the beneficial effects, in particular positive spill-over (Kirchmeyer, 1993), work-family enrichment (Greenhaus & Powell, 2006) and work-family facilitation (Carlson & Grzywacz, 2008; Hanson, Hammer & Colton, 2006; Wayne, Grzywacz, Carlson, & Kacmar, 2007). These constructs are based on the enhancement hypothesis (Marks, 1977) which, in contrast to role scarcity theory, proposes multiple roles can be life enhancing if they provide additional resources such as social support and increased skills. Research studies provide support for the multiple roles thesis. For example, Baruch and Barnett (1987), found women who had multiple roles such as mother, wife and employee reported less depression and higher self-esteem than men and women who had fewer life roles.

Although often used interchangeably, there are key distinctions between each of the constructs of positive spillover, enrichment and facilitation. In particular, positive spill-over focuses on the transfer of “positively valenced individual attributes (e.g., mood, behaviours) between work and family” (Carlson & Grzywacz, 2008, p. 58), whereas enrichment refers to the “extent to which experiences in one role improve performance or the quality of life in the other role” (Greenhaus & Powell, 2006, p. 76). Both spill-over and enrichment focus on individual level consequences, while facilitation focuses on system level consequences (Carlson & Grzywacz). Facilitation is “the extent to which an individual’s engagement in one social system (e.g., work or family) contributes to growth in another social system (e.g., family or work)”, (Carlson & Grzywacz, 2008, p. 58). Thus, it too is a bidirectional process whereby the resources associated with one role (e.g., affect, skills, self-esteem, financial benefits) facilitate participation in the other role (Voydanoff, 2004b).

Although both work-family interference and work-family facilitation contribute to the interrelationships between work life and home life (Balmforth & Gardner, 2006; Voydanoff, 2004a), as previously mentioned, earlier research has focused particularly on the conflict/interference perspective (Bakker & Geurts, 2004; Frone, 2003; Grzywacz & Marks, 2000; Sumer & Knight, 2001), and fewer studies to date have investigated the theoretical basis of facilitation or its impact on work and family roles

(O'Driscoll, Brough & Kalliath, 2006). Similar to much of the work-family conflict research, the majority of studies investigating the positive interaction between work and family to date have been at the individual level of analysis, describing the impacts on individuals' performances in specific domains (e.g., Frone, 2003; Grzywacz, 2000; Grzywacz & Bass, 2003; Wayne, Grzywacz, Carlson & Kacmar, 2007). In particular, individual level outcomes that have been found included improved physical health and psychological wellbeing, greater occupational commitment and marital satisfaction (Frone; Grzywacz). Hill (2005) found work-to-family facilitation was positively related to job, life and marital satisfaction, and negatively related to individual stress and organizational commitment.

Family and relationship crossover effects

In addition to the impacts on individuals, some research has shown work-family conflict and facilitation impacts on functioning within family systems (Greenhaus & Beutell, 1985), including relationships between employees and their partners and family members, and wellbeing of family members. These so-called "crossover" effects occur when an individual's experiences in the work domain influence the wellbeing of others in the home and family domain (Matthews, Del Priore, Acitelli, & Barnes-Farrell, 2006). Both positive and negative crossover effects have been found. An individual's physical health, psychological wellbeing and behavioural adjustment have been shown to be related to their partner's levels of family satisfaction, and satisfaction with the other partner's work (Jackson, Zedeck, & Summers, 1985). Bolger et al. (1989) found that stress experienced by the individual at the workplace led to stress being experienced by the spouse at home. Parents' job insecurity was also to be found to be associated with children's grades at school (Barling & Mendelson, 1999). However, a number of these studies were conducted with dual earner couples thus limiting the application of these findings to families in which only one partner works outside of the home (e.g., Hammer, Allen, & Grigsby, 1997). In particular, Chan and Margolin (1994) found for a sample of dual earner couples that the women's work fatigue was associated with their partner's reactions at home, as was the women's home mood and their partner's work mood. Westman and Etzion (1995) found symmetrical burnout between couples both employed in the military. Thus, in addition to spillover effects between work and family domains, there are also work-family crossover effects between individuals and their family members, that is, work role demands of one family member can directly impact the wellbeing of other family members (Brotheridge & Lee, 2005).

The role of moderating variables

Whereas much of the research has focussed on the determinants and outcomes of work-family interference, a number of studies have highlighted the presence of various moderating individual, family, organizational and job characteristics including the value of each role to an individual, life stage, working arrangements, job characteristics and the availability of social support (Baxter et al., 2007; Brough & Kelling, 2002; Carlson & Frone, 2003; Carlson & Kacmar, 2000; Ford, Heinen, & Langkamer, 2007; Kossek & Ozeki, 1998; Pocock, Skinner, & Williams, 2007; Presser, 2000). These moderating variables are summarised in Figure 5.

Baxter et al. (2007), in their examination of paid employment on the wellbeing of Australian parents of young children, found individual, family and work-related moderating variables on various outcome measures of wellbeing included parents' gender and age, their relationship status (partnered or sole parent), the number of children in the family, the age of the youngest child, the parents' employment status (unemployed, part-time employment, full-time employment; dual earner family), their job type (permanent/ongoing, self-employed and casual) and working arrangements (flexible hours, working evenings/nights or weekends, job security and job autonomy). For example, mothers' wellbeing varied by their relationship status. Single mothers reported significantly higher levels of difficulty combining work and parenting and lower levels on measures of wellbeing than did partnered mothers. For fathers, self-employment was associated with more difficulties and more distress, while greater job security was associated with better coping and less work-family strain for mothers. Other studies have shown the impacts of long working hours can be moderated by job characteristics such as evening/night work or weekend work (Alexander & Baxter 2005; Barnett, 1998). Thus, while work-family conflict mediates the relationship between the work and family domains, the above mentioned moderator variables determine the strength of this relationship (Baron & Kenny, 1986).

Various explanations of the moderating processes associated with these variables have been proposed (e.g., O'Driscoll, Brough, & Kalliath, 2006; Voydanoff, 2008). For example, O'Driscoll, Brough and Kalliath, theorised that moderating variables work in two ways. First, they can influence the strength of the association between the work and family demands and the degree of work-family conflict, and second, they can impact on the relationship between the work-family conflict and the outcome (e.g., work satisfaction). A comprehensive model of the process, however, has

yet to be developed and the majority of studies continue to focus on the determinants and outcomes of work-family interference rather than on the processes that lead to the outcomes (Grandey & Cropanzano, 1999).

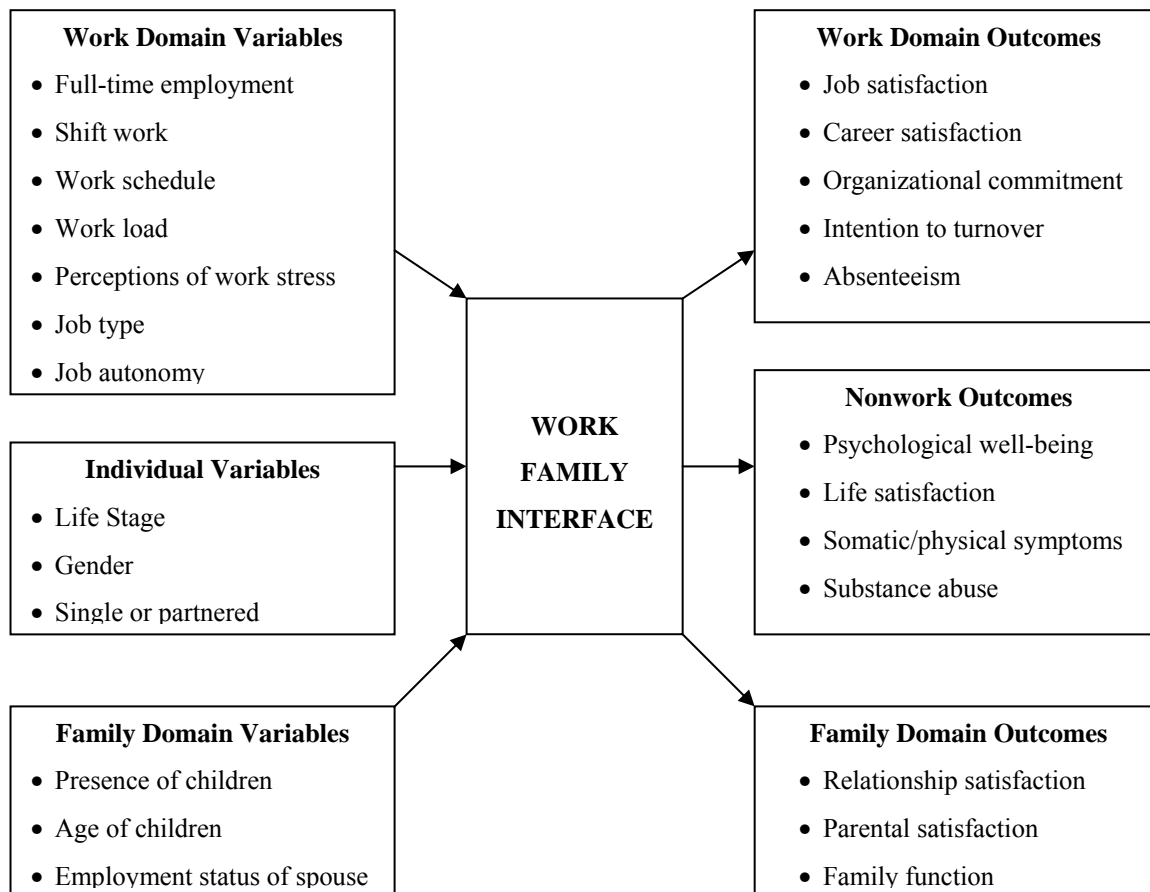


Figure 5. Summary of work-family interface moderator variables and outcomes (Sibbel).

Alternate Approaches

As discussed earlier, role strain theory has been commonly used as a conceptual framework for the study of work-family interference (Greenhaus & Beutell, 1985). The notions that experiencing ambiguity and/or conflict within a role (intra-role) can result in an undesirable state, and that having to perform multiple roles can lead to personal conflict (inter-role) as it becomes more difficult to perform each role successfully, due to conflicting demands on time, lack of energy, or incompatible behaviors among roles (Greenhaus & Beutell, 1985; Katz & Kahn, 1978) have guided much of the work-family research. However, critiques (e.g., Grandey & Cropanzano, 1999; Voydanoff, 2008;

Wayne et al.) of this research have identified various limitations to the approach, in particular, role strain theory's emphasis on the individual level of analysis and its focus on work-family interference and conflict to the exclusion of positive spillover effects. Furthermore, role strain theory does not address the role of moderating variables which mediate the impacts of work and family stressors and stress outcomes (Grandey & Cropanzano).

Systems levels approaches

In response to these limitations, and in acknowledgement of the influence of the complex interactions of individuals with the multiple contexts within which they exist, a growing number of researchers (e.g., Carlson & Grzywacz, 2008; Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005; Voydanoff, 2004b) have recognised the need to extend the focus of work-family research from the individual to a systems levels of analysis, including for example, the family or the community. The ecological systems perspective (Bronfenbrenner, 1979), recognises that individuals are inextricably embedded in a series of complex and interactive historical, cultural and political contexts, and is increasingly being used as appropriate model to guide investigation of the work-family interface (Voydanoff, 2007). Employing such a perspective provides a broad unifying theoretical framework for work-family research and facilitates better understanding of the processes between members of the system, moderating variables and systems levels outcomes such as organizational performance or relationship satisfaction (Carlson & Grzywacz, 2008; Mullen, Kelley, & Kelloway, 2008; Westman & Piotrkowski, 1999).

The ecological perspective has a long association with psychology and the study of human behaviour. It originated from the ecological framework used in environmental biology to understand the interaction of individual biological organisms in the environments in which they exist. The environment is understood as an open living system consisting of different interactive levels (i.e., the biosphere, ecosystem, communities, and populations) which adapt over time. Change can occur at all levels in the system and such change impacts across the other levels. Change at one level is then understood in terms of the context of the whole system (Kelly, 2006). Both ecological and human communities are open living systems which have various levels of organization. As such, the ecological framework has been adopted as an appropriate metaphor for developing understandings about people in their life settings (Kelly, 2006).

Bronfenbrenner's (1977, 1986) ecological systems model, as illustrated in Appendix A, recognizes that people live and function in a series of progressively more complex and interactive embedded systems across time so that every unit is simultaneously both a whole and a part. Whether an individual, a family, a community or an institution, each system is influenced by the status and nature of the other systems of which it is part, and as such is fluid and transactional. These systems include people's home and work environments, their social and cultural settings, their life course stage, as well as society's broader political and historical contexts. Individuals located in the centre, are participant in various microsystems such as family and work places which influence people in their immediate environments. Microsystems are comprised of "patterns of activities, roles and interpersonal relationships experienced in networks of face-to-face relationships" (Voydanoff, 2005, p. 822). Thus for example, FIFO employees' microsystems include those relationships at home and on the minesite. The linkages and processes which occur between these various microsystems and the manner in which they influence each other are situated in the mesosystem (Bronfenbrenner, 1977). For example, a FIFO employee may experience feelings of fatigue and irritability on the first day home after working a week of 12-hour night shifts at the mine which could negatively impact on family relationships.

The exosystem refers to those broader social settings which interact with and influence the microsystem and mesosystems. For example, in the FIFO context a particular minesite might have limited communication options which impact on the ability of an employee to communicate with the family while he or she is on site. Or a FIFO family may have relocated from their 'home' state to access FIFO employment in Western Australia, thus removing them from their usual family and community support systems and resources. The macrosystem includes the cultural, political, historical and social contexts in which all three systems are embedded. The number of FIFO employment opportunities currently available in Western Australia is a result of, amongst others, the 'in ground' availability of the minerals, the environmental clearances to mine the resources, the international market for the mined product and the regulatory permits to export the materials. Further, the hours worked by FIFO employees are influenced by government policy on working hours (DOCEP, 2003), and the support provided for FIFO families depends on company policies. Thus Bronfenbrenner's (1977, 1986) ecological systems model has been deemed an appropriate framework to further investigate the complex interactions between work and home lives. It considers the

person-environment interactions between individuals and the multiple levels of their social-political contexts, including life stage, family, home, and worksite, and the subsequent impacts on wellbeing. In particular, it acknowledges and allows for understanding of the interaction and mutual influence between work and home (Voydanoff, 2005).

There is a growing body of work-family research incorporating the ecological model (Bellavia & Frone, 2003; Mullen et al., 2008). For example, Voydanoff's (2008) conceptually complex model of the positive and negative interconnections between work, family and community is based on an ecological systems framework integrated with aspects of general stress, resilience and border theories⁵. Various linking processes are described which form the mesosystem linking two or more microsystems (i.e., work, home or community). This model posits that the demands and resources associated with participation in the work, family and community domains impact on role performance (behaviours) and role quality (affect) in the other domains, and on individual wellbeing. Demands refers to those role requirements, expectations and norms that require physical or mental responses from individuals within each domain. On the other hand "resources are structural or psychological assets which may be used to facilitate performance, reduce demands or generate additional resources" (Voydanoff, 2008, p. 39).

Two distinct types of demands and resources are described in Voydanoff's model. Within domain demands and resources are those associated specifically with characteristics within a particular domain (e.g. job pressure or family support), while boundary spanning demands and resources are those that belong to both domains (e.g., bringing work home or family friendly work policies). Thus boundary spanning resources and demands operate as demands and resources in domains other than the one in which they originated. Furthermore, demands and resources in one domain are related to cognitive appraisals of work-family balance, work-family conflict or work-family facilitation across these domains. Work-family balance refers to appraisal by an individual of the adequacy of work and family resources to meet the role demands of each domain. In Voydanoff's model work-family conflict is defined as a form of inter-role conflict where participation in one role is appraised as being made more difficult as a result of participation in another role. Work-family facilitation is an appraisal that resources associated with one role enhance participation in another role. Both work-

⁵ See Voydanoff (2008) for a comprehensive discussion of this multifaceted model

family conflict and work-family facilitation are regarded as separate constructs and their impacts as bi-directional.

Voydanoff proposes that it is these appraisals that provide the linking mechanisms that mediate the relationships between demands and resources and role quality and performance. The linking mechanisms lead to boundary-spanning strategies which are the actions individuals and families undertake to reduce any appraisal of misfit between work, family and community demands and resources. For example, by reducing work hours (thus reducing demands), or engaging outside help with home maintenance (increasing resources). According to the model, these boundary spanning strategies can have both mediating and moderating effects on the relationships between work-family linking mechanisms and work-family balance. This model also proposes a direct relationship between the linking mechanisms and work-life balance, “which in turn is associated with work and family, and community role performance and quality and individual wellbeing” (Voydanoff, 2008, p. 41). A number of feedback effects from boundary-spanning strategies to work, family and community demands and resources are also proposed. This recently developed model, based in part on ecological systems theory, is posited as a useful conceptual framework for future work-family interface research at the individual, family and community levels (Whitehead, Korabik & Lero, 2008). However, it does require further conceptual and empirical work to extend its development and test its breadth of application (Voydanoff, 2007).

The role of resources

In further acknowledgement of the limitations of role theory in understanding the role of moderating variables (e.g., gender, age, working conditions, job type, life stage) on the work-family interface, some (e.g., Grandey & Cropanzano, 1999; Wayne et al., 2007) have suggested the use of a more general stress theory to guide research into work-family conflict and work-family facilitation. In particular, Hobfoll’s (1989) Conservation of Resources (COR) theory has been proposed as an appropriate theoretical framework to further these understandings (Grandey & Cropanzano, 1999; Lapierre & Allen, 2006; Wayne et al.). Using an ecological systems framework, this model takes into account the impact of a change in resources on wellbeing, that is, how the loss and gain of material, social and psychological resources mediates the impacts of life stressors on psychosocial wellbeing (Hobfoll, 1989, 2002; Hobfoll, Johnson, Ennis, & Jackson, 2003). For example, resources act as buffers against strain and conflict, thus those individuals who have many resources will experience less work-home related

strain and conflict (Grandey & Cropanzano, 1999). Individual or personal resources and processes include positive emotions, personal beliefs, coping styles and a sense of mastery or control of the environment, especially in challenging situations (Bandura, 1997; Holahan, Moos, Holahan, & Cronkite, 1999; Rappaport, 1981). Social resources and processes include emotional support, guidance and assistance from different levels within the social system including family (e.g., family cohesion and communication) (Hobfoll & Speilberger, 1992), friends and the community (Sarason, Sarason, Shearin, & Pierce, 1987; Thoits, 1995). Protective resources are also found within the macro levels of social organization such as institutions, governments and cultures (Hobfoll, 1998; Sandler, 2001). The formal structures and policies developed by these establishments can impact on the availability of and access to protective resources (Braver, Hipke, Ellman, & Sandler, 2004).

COR theory proposes that conservation of resources is central to the successful adaptation of individuals, families and wider systems to life's stressors. As discussed above, individuals and families have a variety of resources available to them. According to COR theory, people and families strive to maximize the gain of these resources and to minimize their loss. As such, major stressors include threats of the loss of resources, actual loss of resources or "failure to gain resources after significant resource investment" (Hobfoll & Speilberger, 1992, p. 108). Resources are evaluated by individuals in their particular contexts, and how an individual interprets a situation results in either resource loss or resource gain (Hobfoll, Freedy, Green, & Solomon, 1996). While resource loss can have negative adaptive consequences, a gain in psychosocial resources can lead to positive adaptive consequences (Hobfoll, Lilly & Jackson, 1992; Holahan & Moos, 1990). This gain becomes particularly salient after a resource loss has occurred (Billings, Folkman, Acree & Moskowitz, 2000). However, resource loss can have a more intense impact than resource gain because resource loss can set up an adverse cycle in which further loss is likely as fewer resources are available to adapt to further stressors. Alternately, individuals might search for resource gains by attempting to perceive their situation in a more positive light (Folkman & Moskowitz, 2000; Hobfoll, 1998; Holahan, Moos, Holahan & Cronkite, 1999).

While acknowledging the role of personal resources, COR focuses particularly on sociocultural resources that are developed across the life course and which exist in *resource caravans* rather than in isolation (Hobfoll, 2002). Thus, resources, or their lack, aggregate such that, for example, individuals with high self esteem are more likely

to have a greater sense of mastery as well as more supportive social systems. Similarly, those with low self esteem may be less likely to access social support in times of stress (Hobfoll, 2002). Resources then, are those tools which facilitate successful interaction with and adaptation to the environment, and thus contribute to wellbeing. However, the fit of resources to demands, that is, the interplay between resources and situational needs changes over time as the contexts of people's lives change (Grandey & Cropanzano, 1999; Hobfoll, 1986).

When applied to the work-home interface, COR relates to both inter-role and intra-role positive and negative stress outcomes. In terms of positive outcomes, COR theory implies the availability of more resources will increase the potential for facilitation which has been shown to result in improved work (e.g., work group cohesiveness) and family (e.g., marital quality; family wellbeing) system functioning (Hill, 2005). While resources such as social support can have a direct impact on subjective outcomes, the strongest effects have been found to be on the domain in which they originated (Frone et al., 1997; Parasurman et al., 1996). For example, support from co-workers has been shown to have a greater impact on reducing job distress than on increasing home satisfaction (Durup, 1993) and spousal support has been positively associated with home satisfaction (Bedian, et al., 1988; Parasuraman, et al., 1996). Variables such as gender, marital status, age, job type, status and tenure have been classified as resources in this context and their moderating roles can be explained in terms of COR theory (Grandey & Cropanzano, 1999). For example, having security in job tenure may be regarded positively and thus could contribute to an increase in individual and family resources, which in turn impacts positively on wellbeing (Grandey & Cropanzano).

When applied to negative outcomes, COR theory implies work-family conflict occurs when demands associated with attempts to integrate work and home lives lead to a loss of resources which has been associated with increased job distress and reduced marital and life satisfaction (Brotheridge & Lee, 2006). For example, Geurts, Kompier, Roxburgh, and Houtman's (2003) investigation into the impact of workload on wellbeing suggested that the inability to recover from workload demands worsened over time as resources in both domains were continually depleted.

A number of studies have demonstrated empirical support for the appropriateness of COR for work-family interface research (e.g., Edwards & Rothbard, 2000; Lapierre & Allen, 2006). Grandey & Cropanzano (1999) used a COR framework

with a time-lagged design and path analysis for their investigation of the relationships between work and family stressors and work, family, and life distress, physical health, and turnover intentions. They found this model better predicted their results than did role strain theory. In particular, chronic stressful experiences were related to a desire to minimise resource losses. Further, having a partner was viewed as a means of both instrumental (help with home-related duties and responsibilities) and emotional support (encouragement and understanding), and thus regarded as a resource. Similarly, Lapierre and Allen's (2006) study of university graduates found family-provided instrumental and emotional support helped avert family interference from work. Such findings are in contrast to other results based on role strain theory (e.g., Lu et al., 2008) which posited that having a partner and thus having multiple roles to fill, that is employee and partner, would lead to heightened stress. Thus the use of an ecological systems approach and a COR framework could allow better understanding of the impacts of work family interactions and the role of resources and moderating variables.

Implications of Work-Family Interference and Facilitation for FIFO Employees and Families

The preceding review of the general work family interface literature established that the competing demands of work and family roles can impact negatively on the psychological wellbeing of individual family members, and on family and spousal relationships as a whole. Specifically, it has been associated with psychological strain including, for example, depression and anxiety, reduced marital satisfaction and poorer family function. However, the developing work-family facilitation research also suggests that access to personal and environmental resources can result in positive impacts on the wellbeing of individuals and the work and home systems of which they are part. Furthermore, these impacts can be moderated by various individual, family and work related variables. The review proposed that future research should adopt an ecological systems approach to expand investigations beyond that of the individual and that use of a COR framework would facilitate understanding the role of resources and the processes of moderating variables. Thus, in terms of these findings, the impacts of the particular demands (i.e., long working hours and regular absence) of FIFO employment on the psychological wellbeing, relationship satisfaction and family function of FIFO employees and their families could be associated with access to individual and environmental resources, and the aforementioned individual, family and work related factors.

The following chapter reviews the work-family interface literature which relates specifically to the impacts of work related absence and FIFO working arrangements on individual and family wellbeing and relationship satisfaction.

Chapter 3

FIFO Research

The following chapter reviews the work-family interface literature which relates to the impacts of work related absence. In particular, it evaluates research investigating the impacts of FIFO working arrangements on individual and family wellbeing, and relationship satisfaction. First earlier international FIFO research is discussed followed by an in depth review of Australian FIFO research studies in both the oil and gas and land-based mining sectors.

Chapter 3

FIFO Research

“Work and family decisions are made in the context of a broad set of interacting factors including opportunities and preferences, family formation, parenthood, caring and intergenerational arrangements, education, and work and learning opportunities later in life, and retirement prospects” (OECD, 2002).

Introduction

The previous chapter examined the interface between work and home lives, and in particular the impacts of work-family conflict and work-family facilitation. The review of the work-family conflict/facilitation literature established that although the demands of work and family can impact negatively on the psychological wellbeing of individual family members and on family systems and relationships, access to personal and environmental resources can result in positive impacts on wellbeing. However, much of the research was conducted with individuals living in traditional relationships with standard working arrangements. The impacts of non-standard work arrangements such as compressed work schedules have received less attention (Presser, 2000). FIFO is one such non-standard arrangement, combining compressed work schedules with regular employee absence and often involving shift work.

As discussed in Chapter 1, the number of people choosing FIFO employment has increased as a result of continued expansion in the Australian resources sector (CMEWA, 2008a). Despite this growth, there have been few research studies investigating the impacts of FIFO working arrangements on the interaction between work and home for FIFO mining employees and their families. In particular, the impacts of FIFO employment on psychological wellbeing, and family and social relationships and the role of contextual factors such as personal and environmental resources on these impacts are poorly understood. Consequently, research from other industries that require their employees to be absent from home on a regular basis has frequently been used by researchers, policy makers and industry to provide theoretical frameworks and guide our understandings of FIFO impacts (Arnold, 1995). Those sectors that require their employees to be frequently absent from their homes include the military, as well as the merchant marine, deep-sea fishing, forestry, construction, transportation and the off-shore oil and gas industries, amongst others (Shrimpton, Storey, & Husbers, 1995; Vormbrock, 1993). Salespeople, corporate executives, and airline personnel are also

required to regularly be absent from home for employment related duties (Boss, McCubbin, & Lester, 1979; Espino, Sundstrom, Frick, Jacobs, & Peters, 2002; Jupp & Mayne, 1992). However, differences in the employment conditions, including for example the profile of absences, means that findings from research with these groups has limited application to FIFO circumstances.

Employment Related Absence

Early understandings of the impacts of work-related absence on employees and their families were based mainly on research conducted during the last thirty years with the international offshore oil and gas (e.g., Morrice and Taylor, 1978; Morrice, Taylor, Clark & McCann, 1985; Solheim, 1988; Storey, Lewis, Shrimpton & Clark, 1988) and to a lesser extent international mining workforces (Storey & Shrimpton, 1989), and American military personnel (e.g., Jensen, Grogan, Xenakis & Bain, 1989; Jensen, Richters, Ussery, Blodeau & Davis, 1991; Jensen, Xenakis, Wolf & Bain, 1991; LaGrone, 1978). The majority of these industries were (and still are) traditionally male dominated and as such, much of the research focused on the impacts on male employees, their female spouses and their children (Eastman, Archer & Ball, 1990; Jensen, Martin & Watanabe, 1996; Parker, Hubinger, Green, Sargent & Boyd, 1997).

There are however a number of differences between the employment conditions in the different industries that need to be acknowledged when reviewing the findings. For example, the profiles of absences differ between the employment groups. Some employees such as those involved in offshore oil and gas experience continuous rostered absences such as two weeks away followed by two weeks at home and so on, whereas others such as the Australian military might be required to be absent for up to eight months at a time on an irregular basis (ABC, 2008; Arnold, 1995). On the other hand, as described in Chapter 1, mining operations' FIFO employees are more likely to have short, non-symmetrical rosters, for example two weeks away and one week home or eight days away and six days home (Brereton, Barclay, Beach, Laffan, & Arts, 2006). Further, in some industries, employee absence can be seasonal, that is, only at certain times of the year when climatic conditions or government policies allowed access to the resource. For example, particular types of deep sea fishing (Shrimpton et al., 1995), or on a needs basis, for example ships' pilots within the Great Barrier Reef (Parker, Clavarino & Hubinger, 1997). Work schedule practices also vary between industries with some working compressed schedules such as 12 hour shifts, eight hour continuous shifts or other industry- particular shift arrangements, while others follow more standard

practices such as the eight hour day. Other differences between the employment types include the degree of hazard associated with the workplace; work environment (e.g., based on land or at sea; fixed or variable location, international or local travel); type of accommodation provided, access to communication facilities and support provided for employees and their families (Sibbel, 2001). These differences all have potential to impact on the way in which employees and their families experience work-related absences, and integrate their work and home lives.

International research

Many of the earlier international studies on work-related absence were premised on the understanding that employment that required regular absence from home was “non-standard” and as such was a risk factor for psychosocial problems for employees and their families (Bray, 1991; Forsyth & Gauthier, 1991). This premise resulted in theories such as the “Military Family Syndrome” which was characterised by families with “depressed” and overprotective mothers, children with emotional and behavioural problems, and authoritarian fathers (Jensen et al., 1991; Kelley, Herzog-Simmer, & Harris, 1994; LaGrone, 1978), and the “Intermittent Husband Syndrome” which was typified by a triad of symptoms comprising anxiety, depression and sexual difficulties for oil workers’ wives associated with the ongoing partings and reunions with their husbands (Morrice & Taylor, 1978). Both conditions were based on the families’ presumed inability to cope with the work-related absences, however subsequent research discounted the existence of these syndromes (Eastman et al., 1990; Jensen, Watanbe, Richters, Corte, Roper, & Liu, 1995; Morrice et al., 1985; Storey, Shrimpton, Lewis, & Clarke, 1989).

In contrast to the earlier studies (e.g., Morrice & Taylor, 1978), Taylor, Morrice, Clark, and McCann (1985) found no significant differences on measures of physical and psychosocial wellbeing between the wives of on-shore and off-shore oil workers, although the wives of offshore workers did report some mood changes associated with the regular comings and goings of their husbands. There was no evidence of the “Intermittent Husband Syndrome” described earlier, and the majority of wives successfully adapted to the lifestyle. The approximately ten percent of the wives who reported unhealthy levels of wellbeing were more likely to be those women who were newly married, had pre-school aged children and no previous experience of husband absence, those who had employment outside of the home or those whose husbands had irregular absences (Taylor et al., 1985). Particular sources of stress were continually

having to adjust to the regular comings and goings, and difficulties with communication. It was proposed that those who had more traditional spousal roles, that is, those who accepted the primacy of the husband's work and the role of the wife as supportive homemaker were more likely to cope with the lifestyle (Clark & Taylor, 1988). This is in keeping with Solheim's (1988) conclusion that those with "traditional" marriages required less adjustment to FIFO and thus were better suited to the lifestyle. In these types of couples both the wife's role as homemaker and the husband's role as provider continued despite the repeated comings and goings. Clark and Taylor (1988) also outlined some of the coping strategies used by those wives who successfully coped with their husbands' absences. These included: positive appraisal of the lifestyle focussing on the benefits rather than the costs; personal resources such as sense of competence and self-esteem; social resources, both emotional and practical, provided by friends and family; and manipulating the environment such as increasing opportunities for social interaction by taking paid or unpaid work.

These findings concur with those of Storey and Shrimpton (1989), and Storey, Shrimpton, Lewis and Clark (1989) who conducted a series of studies with Canadian offshore oil and gas and mining workers and their spouses. In this series of studies, it was concluded that although the majority of families coped well, there was an association between the length of roster and relationship wellbeing, that is, those with longer rosters (e.g., nine weeks away and three weeks home, compared with seven or fourteen days away and seven days home) generally had more difficulty with the lifestyle. Further, each family's experience depended on the way in which they perceived and evaluated the costs and benefits associated with FIFO employment. While many cited the extended periods of time at home and financial rewards as the main advantages, problems included transitions within the family, and maintaining relationships with friends and other community members, and negotiating the use of leisure time. They concluded that the majority of couples seemed able to cope with the lifestyle, indeed for a few it "may be the glue that holds the relationship together" (Storey & Shrimpton, 1989, p. 159), although others sooner or later found it unacceptable and either left the industry or the relationship broke down.

For those families with children, there were differences in spouses' reports of whether children's behaviour varied when the worker was at home or away. While 48% of spouses reported no change, 34.6% reported children's behaviour was more difficult to manage when the worker was away and the remainder when they were home. Single

workers were also included in this research and particular issues for this group included problems with establishing and maintaining relationships, although it was also reported that FIFO provided single workers with greater opportunities for travel and leisure activities (Storey & Shrimpton, 1989; Storey et al., 1989).

Arnold (1995), in her review of this earlier literature concluded successful adaptation by employees and their partners to work-related absence was associated with individual factors such as the profile of time away, perceptions of the degree of hazard associated with the workplace; work environment (e.g., based on land or at sea; fixed or variable location, international or local travel); stage in the family life cycle; attitude to the lifestyle and access to social support. In addition to the “economic and temporal” compensations of the lifestyle, Arnold also concluded from the earlier studies that the FIFO work pattern was problematic in some ways for virtually everyone involved. These difficulties were related to family relationships, loneliness and isolation, psychological wellbeing and stresses associated with the constantly changing roles.

Much of this earlier research referred to nuclear families with traditional gendered household roles. Indeed the findings reflect family structures and values at the time. For example, in relation to the Canadian mining industry which commenced FIFO operations in 1972 (Storey & Shrimpton, 1991c), Bray (1991) highlighted the stress for FIFO workers was associated with living an “abnormal” life – “fluctuating between an isolated high-pressure, extremely structured, macho work environment and an unstructured period in the haven of the home and family” (p. 26). Living FIFO was postulated as more problematic for the spouse at home as a result of having dual roles – that of a traditional home maker as well as periodically having sole responsibility for running the home (Bray, 1991). The wife at home was often cast in a “waiting role” and the problems of adjustment were regarded as hers (Storey, et al., 1989). At this time (i.e., prior to the 1990s), the assumption underlying the use of FIFO and the wellbeing of the employees was that of traditional family roles in which men were responsible for providing financially for their families and women were responsible for caring for children and the house. Thus it was expected “that workers will, between periods at the mine site, be able to return to a family home to rest and be cared for in preparation for the next hitch. In effect, the success of LDC⁶ depends on an invisible workforce at

⁶ FIFO has also been referred to as Long Distance Commuting (LDC) by a number of researchers such as Storey and Shrimpton (1989).

home, supporting the visible workforce at the mine” (Storey, et al., 1989, p. 26). It was evident from both the Canadian (e.g., Lewis et al., 1988) and the Norwegian (e.g., Solheim, 1988) research that the FIFO husbands in these studies had little understanding of the changes that occurred within their families as a result of their regular comings and goings and the consequent demands made upon their wives. Furthermore, Solheim (1988) reported a similar lack of understanding within the community in which these families lived. Thus community based help and support for the family was not necessarily forthcoming.

While this earlier research does provide some insights into FIFO impacts, contextual issues such as differences in the profile of absences, availability of and access to social and other family support and resources, together with industry and country related cultural differences limit the degree to which these findings can be used to understand the particular experiences and impacts of FIFO on current Western Australian mining employees and their families. For example, many of the international studies focused on North Sea Oil workers, many of whom lived in close proximity to each other in FIFO communities such as Aberdeen in Scotland (Mauthner, MacLean, & McKee, 2000) with access to community support that is not necessarily experienced by the Australian FIFO population (Heiler, Pickersgill, & Briggs, 2000). Furthermore, the structure of families and gender role expectations have changed since that time (Squire & Tilly, 2007).

Australian Research

The adoption of FIFO working arrangements by Australian mining companies in the 1980s resulted in a number of studies during the following decade that used survey methods to canvas the attitudes of FIFO employees, and to a lesser extent their families, to their working arrangements and its impacts on their work and home lives (e.g., Gillies, Just, & Wu, 1991; Gillies, Wu, & Jones, 1997; Limerick, Crane, Roberts, & Baillie, 1991; Pollard, 1990). The findings were generally consistent with those of the Canadian mines and oilfields, and the North Sea oilfields. The Australian employees valued the advantages of extended periods of leisure and the relatively high earnings, as well as their families' continued access to services, facilities, families and friends. However, the results of these studies were generally descriptive in nature and did not speculate on theoretical processes of the impacts of FIFO on employees and their families.

Gillies et al. (1997), surveyed 227 FIFO employees on 15 Australian FIFO operations during 1996. While a large proportion indicated they did not believe their families were seriously disadvantaged by the lifestyle, approximately 30% of the respondents indicated that their family “categorically” did not like the FIFO lifestyle. Furthermore, 25% felt that their immediate family relationships had been seriously disadvantaged by the FIFO employment. In summary Gillies et al., reported “a large portion of FIFO workers either greatly dislike, are impartial to or greatly like FIFO” (p. 91). This study, however, did not survey the employees’ family members. Jackson (1987), in his discussion of FIFO in Australia asserted that the “family lives of workers have been greatly improved” and that “the family's satisfaction with the wage earner's job seems to be radically improved” (p. 164). Unfortunately, Jackson did not provide any evidence in support of these assertions. Pollard (1990) interviewed workers and their spouses from three Western Australian FIFO mining operations. Some couples reported a high degree of impact on “normal family life”, particularly associated with the division of household labour and child care. Restricted access to childcare (expense and limited to working mothers), limited spousal employment opportunities and a sense of alienation from the community exacerbated these impacts for FIFO families living in regional centres such as Broome (Pollard, 1990). Availability of communication was also described as an important ameliorating factor to the family disruption, however the availability of access to phones and lack of privacy when making calls on site together with the expense of long distance calls limited these positive effects. Pollard concluded there was “a significant social impact on the families of fly-in/fly-out workers” (p. 30).

Australian Resource Sector Research

Since the 1990s there has been ongoing increase in the number of Australian workers adopting the FIFO lifestyle (CMEWA, 2008a). Despite this growth an extensive search revealed only a small number of recent research studies investigating the experiences and wellbeing of Australian mining and offshore oil employees and their families since the late 1990s. These are presented in Table 2. Of these studies Beach (1999); Keown (2005); Sibbel (2001); and Sibbel and Kaczmarek (2005) focused solely on land-based mining, each of the other studies included participants from the oil and gas sectors. Three of these studies (Gallegos, 2006; Keown, 2005; Watts, 2004) were funded by and conducted on behalf of government and/or industry bodies.

Similar to the work-family interface research that was reviewed in the previous chapter, research into the impacts of FIFO working arrangements on the wellbeing of

Australian employees and their families has also been undertaken by a number of different disciplines (e.g., counselling psychology [Reynolds, 2004; Taylor, 2006], clinical psychology [Keown, 2005], community development [Gallegos, 2006; Watts, 2004]; sociology [Beach, 1999]), using various qualitative and/or quantitative designs, as outlined in Table 2, and thus lacks a single, uniting theoretical framework. Other research has investigated FIFO related organisational issues such as job satisfaction (e.g., Brereton, Barclay, Beach, Laffan, & Arts, 2006), work performance, safety, and employee turnover, attraction and retention (e.g., Beach, Brereton, & Cliff, 2003), and changes in FIFO work attitudes and practices (Graham, 2000), as well as regional implications and economic perspectives of FIFO (Maxwell, 2001; Price, 2008) using literature review and survey designs. Those projects that investigated aspects of the psychosocial wellbeing of FIFO employees and/or their families are summarised below.

Table 2

Australian FIFO Research

Authors	Title	Industry Sector	Participants	Method
Beach R (1999)	The impact of intense work schedules on family structure: A case study of a 4:1 fly-in/fly-out schedule in the Australian mining industry	Mining	10 FIFO couples	Interviews
Gallegos D (2006)	Aeroplanes always come back: Fly-in fly-out employment: Managing the parent transitions ⁴	Mixed ¹	32 FIFO Couples	Surveys & Interviews
Gent V (2004)	The impact of fly-in/fly-out work on wellbeing and work-life satisfaction	Mixed ²	114 male & 18 female FIFO employees	DAS
Kaczmarek EA & Sibbel AM (2008)	The psychosocial well-being of children from Australian military and fly-in/fly-out (FIFO) mining families	Mining and Military	30 8-12yo children of FIFO employees & their mothers, with age and gender matched community control group	CDI RCMAS FAD
Keown N (2005)	Digging deep for better health: A study of the health status of men in the Goldfields mining industry of Western Australia ⁵	Mining	148 FIFO & 362 residential male employees 53 female spouses	Interviews & Surveys Various standardized measures of wellbeing
Macbeth M (2008)	“He’s My Best Mate”: Fathers, Sons and the Fly In/Fly Out Lifestyle	Mixed ¹	8 13-21yo males who have FIFO fathers	Interviews
Pirotta J (2006)	An Exploration of the Experiences of Women Who Work at Mine Sites on a Fly In, Fly Out Basis	Mining	20 female FIFO employees	Phenomenological Interviews
Reynolds S (2004)	The effects of fly-in fly-out employment in the oil and gas industry on relationships in Western Australia	Offshore Oil and Gas	22 female partners of male FIFO employees	Interviews

Sibbel AM (2001)	The psychosocial wellbeing of children from fly-in/fly-out mining families	Mining	30 8-12yo children of FIFO employees & their mothers, with age and gender matched community control group	CDI RCMAS FAD
Sibbel AM & Kaczmarek EA (2005)	When the dust settles how do families decide: FIFO or residential?	Mining	25 male & 10 female residential employees & 22 male & 8 female FIFO employees	Interviews, focus groups and written survey
Taylor J (2006)	Family stress and coping in the fly-in fly-out workforce	Mixed ¹	33 FIFO employees and 30 partners of FIFO employees	FACES IV
Watts J (2004)	Best of both worlds: Fly in-fly out research project final report ⁶	Mixed ³	33 FIFO employees, 28 partners FIFO employees, 39 residential employees, 15 former FIFO workers, 91 non-mining Pilbara community members	Interviews & focus groups

Notes: ¹ Mixed includes participants from both the mining and offshore oil and gas sectors. ² Mixed includes participants from construction, mining and oil and gas sectors.

³ Mixed includes participants from construction, mining and oil and gas sectors and non- resource sectors.

⁴ Research funded by CMEWA and Lotteries Commission of WA

⁵ Research funded by the Department of Health Western Australia and Goldfields Men's Health Inc.

⁶ Research funded by Pilbara Regional Council

CDI – Children's Depression Inventory; DAS – Dyadic Adjustment Scale; FACES IV – Flexibility and Cohesion Evaluation Scales IV; FAD - Family Assessment Device; GHQ 12 – General Health Questionnaire 12; RCMAS – Revised Children's Manifest Anxiety Scale

The following section reviews the studies as presented in Table 2. Due to the paucity of studies related specifically to mining personnel and their families, this review will include the research from both the oil and gas and mining sectors in order to provide the context of our current understandings of the impacts of employment related absence on the wellbeing of employees and their families. First, differences between the employment conditions and working arrangements between the sectors are acknowledged, followed by a review of the studies and their implications for further research in the area.

The main differences between the FIFO employment practices of Australian off-shore oil and gas and the land-based mining industries are the roster profiles and work place locations. As discussed earlier, off-shore oil and gas rosters are more likely to be even-time (e.g., two weeks away followed by two weeks home [2/2] or four weeks away followed by four weeks home [4/4]) whereas mining rosters are more likely to be uneven such as two weeks away followed by one week home [2/1] or nine days away and five days home [9/5]). In respect to work-sites, mining activities are land-based, whereas off-shore oil and gas employees predominantly work and are accommodated on sea-based installations. Their physical work environment is constrained by the size of the platform or rig resulting in limited work and recreational space, greater use of 'hot bedding'⁷, and a lack of privacy for employees. There can be a perception of greater hazards associated with the offshore workplace including; adverse weather conditions, the confined physical environment (e.g., noise, ventilation and lighting), fire⁸, and transport to and from the worksite (typically by boat or helicopter) (Parkes, 2002).

Similarities between the off-shore oil and gas and land-based mining industries, other than being in the same sector, include remote work locations, compressed work schedules and continuous rosters that result in regular separations from and reunions with family and community. They may also include shift work and monotonous or repetitive work (Parkes, 2002; Sutherland & Cooper, 1996). The families of FIFO workers from both

⁷ Hot bedding refers to the practice whereby people on opposite shifts use the same bed and accommodation facilities on site.

⁸ For example the Piper Alpha disaster of 1988 in which 167 men died in an explosion and fire on the North Sea production platform.

sectors are likely to live in a capital city or large regional centre (Watts, 2004) with access to community facilities and social support. In addition to family and community resources some company support is also available however the type and degree of support provided by companies to families of FIFO employees is more likely to differ between individual companies rather than between industry group (i.e., land-based mining or oil and gas) (CMEWA, 2008a).

As detailed in Table 2, each of the research studies listed investigated the impacts of FIFO employment from different perspectives and on different profiles of employees and/or their families, thus each study will be reviewed individually. Despite having different theoretical bases, all but one project (Gallegos, 2006), was premised on the proposal that regular employment related absence would have various negative psychosocial or physical individual or relational impacts on FIFO employees and/or their families. The research focusing on employees, both single and partnered is reviewed first, followed by couples, partners and children. Finally, those relevant findings from the organisational and other studies are presented.

FIFO employees

Mining has been the major industry in the Eastern Goldfields region of Western Australia since 1893 when gold was first discovered in Coolgardie (Blainey, 1994). Both residential and FIFO minesites provide employment in this area of which Kalgoorlie is the regional centre. Premised on anecdotal and limited empirical evidence of “unhealthy lifestyles, risky and maladaptive behaviours” (p. 17), Keown (2005) used a multi-methods design to investigate the general, psychological and social health of 510 male residential (71%) and FIFO (29%) mining employees from 29 organisations in this region. Semi-structured interviews together with survey instruments (e.g., items from the HILDA Survey)⁹ and standardised psychometric scales (e.g., General Health Questionnaire 12 [GHQ 12], [Goldberg & Williams, 1991], Short Form 36 Health Status Questionnaire [SF 36], [Ware & Sherbourne, 1992]) assessed levels of general health, role limitation due to physical and emotional health problems, psychological distress, sleep disturbance, chronic

⁹ See Wooden (2003) for further information on the HILDA Survey

fatigue, extraversion and neuroticism, social functioning, social and domestic satisfaction and interference, work-family balance and social support (Keown, 2005). A total of 53 partners of residential workers also completed self-report questionnaires on the wellbeing of their partners. Of particular interest to this review are the findings relating to the FIFO employees included in the study. For this group no significant differences between the general and physical health, levels of chronic fatigue, and perceptions of availability of social support from work colleagues, family and friends were found between the residential and FIFO workers. Further, there was evidence of greater use of more effective and positive coping strategies by FIFO workers. This group also recorded healthier lifestyle habits; for example they had greater levels of physical activity, lower caffeine and tobacco consumption, as well as lower risk of harm from alcohol in both the long and short terms. However, compared with residential workers, the FIFO employees reported higher levels of sleep disturbance and disruption to their social and domestic lives. In common with earlier findings (e.g., Adams, 1991; Gillies et al., 1997) some workers reported their initial short term plans to be in the industry were extended due to the “golden handcuff”, that is disliking the lifestyle but needing to remain in the industry to meet personal financial commitments (Adams, 1991; Gillies et al., 1997). The report generated to date from this study presented mainly summary data which was generally descriptive in nature with little attempt to explicate the results. As such, the findings cannot be discussed in further depth.

An earlier study by Gent (2004) investigated the interaction between the job satisfaction, life satisfaction and relationship satisfaction of a total of 132 (86.4% male and 19.7% female) land-based (65.9%, n = 87) and off-shore oil FIFO employees (45%, n = 45) using self-report instruments. No significant differences between the land-based mining and off-shore oil workers on all measures of satisfaction were found, however, differences were reported between various roster and shift arrangements. The rosters worked included both symmetrical (e.g., 2/2) and non-symmetrical (e.g., 2/1) arrangements and ranged from five days on and two days off to five weeks on and five weeks off. Those employees who worked only day shift reported significantly higher levels of job satisfaction than those who worked only night shift or a combination of days and nights,

although shift type did not impact on relationship or life satisfaction. Further, those who worked a roster of five days away and two days home expressed significantly higher job satisfaction than those who worked non-symmetrical rosters of more than three weeks away. There were, however, no significant differences between the employees' roster cycles and satisfaction with their relationship with their partner. Nonetheless, when compared with established norms married and cohabiting FIFO workers reported significantly lower (less healthy) scores on measures of dyadic consensus, dyadic satisfaction and total relationship satisfaction as measured by the Dyadic Adjustment Scale (Spanier, 2001). There were, however, no differences on the measure of relationship satisfaction. Furthermore, the FIFO workers reported significantly higher scores on the measure of affectional expression than the norm. Gent reported that those FIFO employees with children younger than five had significantly less relationship satisfaction, and expression of affection than those with adult children or no children. In addition, those with children aged between 13 and 17 years had less healthy total relationship scores than those with older or younger children. However, it was not reported how these results compare with the particular lifecycle stages of the wider Australian population and some of the statistical analysis for this study was undertaken with very small cell sizes.

Similar to earlier findings (e.g., Storey & Shrimpton, 1989; Storey et al., 1989), positive aspects of the FIFO lifestyle included higher income, separation of work and home, and time to spend with the family and in the community. In contrast, negative impacts included long working hours, extended periods away from family and friends, difficulties forming and maintaining relationships, negotiating roles within the family, interruptions from site during the break and difficult working conditions. In addition, longer rosters (e.g., three weeks away and three weeks home) were viewed less favourably than shorter arrangements such as two weeks away and two weeks home. Gent concluded that FIFO employment did impact on job, life and relationship satisfaction, and that those employees who liked their jobs and had stable relationships were more likely to adapt successfully to a FIFO lifestyle.

Pirotta (2006) used qualitative methods to investigate the experiences of Western Australian female FIFO employees and found both work and individually focused impacts.

Similar to previous findings, positive aspects of the lifestyle included level of remuneration, the nature of the work, and career opportunities. The sense of belonging within the mine site community, making enduring friendships and the attention at work that resulted from being in the minority¹⁰ (minesites have a higher proportion of male workers) were also valued. Challenges included difficulties maintaining friendships and relationships, coping with community living, loneliness, feelings of depression, and ongoing fatigue. The female FIFO employees in this study reported a number of issues specifically associated with working in a male-dominated environment, such as little female contact, lack of privacy, maintaining appropriate boundaries with male work colleagues and coping with discrimination and harassment. Most of the women did not regard FIFO as a long-term work option. One of the few studies to particularly discuss the role of resources in moderating the impacts of FIFO, Pirotta concluded that amongst others, personal resources that contributed to women's successful adaptation to the FIFO lifestyle included being open-minded and independent, sociable, resourceful and determined to reach one's goals.

In summary, these investigations into the impacts of FIFO work arrangements on male and female employee wellbeing and job, life and relationship satisfaction found no significant differences between the levels of job, life and relationship satisfaction of oil and gas and land-based mining FIFO employees, or the levels of psychological wellbeing of residential and FIFO mining employees. However, roster and life stage effects were found. Similar to earlier findings (e.g., Gent, 2004; Keown, 2005), the positive aspects of the FIFO lifestyle included higher income, separation of work and home, and time to spend with the family and in the community, while the challenges included extended periods away from family and friends, ongoing fatigue, difficulties forming and maintaining relationships, and negotiating roles within the family.

¹⁰ Minesites have a minority of female workers – recent estimates indicate the resources sector averages 19% female employees (Minerals Industry Council of Australia, 2007; CMEWA, 2008)

FIFO couples

A small number of studies specifically investigated the experiences of FIFO couples. Focusing on relationships, Reynolds (2004) interviewed the female partners of 22 Australian off-shore oil and gas workers whose schedules were either four swings of two weeks away and two weeks home which was followed by a six week break at home or three weeks away/three weeks home/three weeks away/six weeks home. The findings from this phenomenological study highlight the complex interactions and impacts for couples associated with the lifestyle. Using the relationship developmental stage of the couples to frame the study, Reynolds identified some advantages and stressors that were unique to particular stages, and others that were common to all. Similar to findings from the previous employment absence studies, the majority of the women valued the quality time they had with their partners when they were home, the opportunities for independence and maintenance of their own identity when their partner was away, and the financial rewards offered by the lifestyle. They believed that the daily phone calls with their husbands while they were offshore helped communication within their relationships. Further, Reynolds suggested that many couples attributed problems and issues in their marriage to the FIFO lifestyle removing the blame from the relationship to an external source and thus making it easier to cope. This supports Storey and Shrimpton (1989) who proposed that FIFO employment may help maintain some relationships. There was no evidence that the increased independence of the women threatened the relationship as had been found by others (e.g., Clark & Taylor, 1988; Collinson, 1998; Solheim, 1988). As discussed previously, these earlier studies proposed that 'traditional' marriages were best suited to the lifestyle. The greater sense of independence that was felt by some wives as a result of their husbands working away was presumed not to fit with the traditional gender role expectations and thus threatened the marriage. On the contrary, Reynolds proposed that the increased independence afforded by a FIFO lifestyle was more appropriate to current relationship expectations and roles, and thus was viewed as a benefit to, rather than a strain on, relationships.

Similar to earlier findings, the stressors associated with FIFO included ongoing readjustment within the family as a result of the regular comings and goings, together with

the "burden of responsibility of family and home for the women when the husband is away" (Reynolds, 2004, p. 35). Loneliness was only identified as an issue for those without children. Furthermore, these women, together with those who had adult children reported the most satisfaction with the lifestyle. Those women with children, and particularly those with teenagers, reported more negative experiences than those without as a result of coping with childrearing for long periods on their own. These findings for the partners of FIFO workers with teenage children support those of Gent (2004) for FIFO employees. A number of women found the six weeks together to be too long, while others found it stressful not living near family support. Reynolds also reported that fatigue was particularly an issue for women who had employment outside of the home. However, most women were satisfied with, and accepted the lifestyle.

More recently, Taylor (2006) examined the qualities that allow FIFO families to function and experience relationship satisfaction despite the stressors associated with the lifestyle. Using the Circumplex model of couple and family systems, the wellbeing of 28 couples and seven single employees (18% construction workers, 41% offshore oil and gas and 41% land-based mining), was assessed on measures of coping, flexibility and communication. Although the sample sizes were too small for detailed meaningful statistical analysis, comparisons with the norms revealed very good communication and high levels of cohesion and flexibility indicating healthy family functioning across the sample. In contrast to Gent (2004), Taylor did not find any effect of family life stage on employees' perceptions of family satisfaction. However, similar to Taylor et al., (1985) and Reynolds (2004), family life stage effects were reported for partners of FIFO employees. In particular, Taylor reported partners' family satisfaction increased as they "move up the life stages" (p. 43).

Taylor found the impacts of partner employment outside of the home on family functioning were associated with age of children. For families with teenage children, the mother's part-time work impacted on family functioning in a positive way, whereas full-time work made coping more difficult. For those families with young children, the level of family functioning was not associated with whether the mother stayed at home or had part-time work. However, for those families with independent adult children, full-time work by

the at-home partner was associated with significantly higher family functioning when compared with part-time work. These findings support earlier research (e.g., Clark & Taylor; Reynolds, 2004; Solheim, 1988) which concluded that, in addition to career and financial rewards, partners of FIFO workers seek paid employment to provide a sense of purpose and a means of social interaction when their partners are absent. However, such work could limit the time together when the FIFO employee is home, and could result in role overload for those with dependent children at home, thus many sought part-time and flexible working arrangements. Taylor concluded that successful coping for FIFO families was linked to a number of factors including life stage, roster, and previous FIFO experience.

Similar to the mining practices in the Eastern Goldfields, the Pilbara region of Western Australia has a blend of both residential and FIFO operations with a significant increase in FIFO workers over the last ten years. Watts (2004) examined the impacts of FIFO employment in the Pilbara as part of an action research project that aimed to develop strategies to maximise the benefits and minimise the negative impacts of FIFO in that area. This study used individual interviews and focus groups with thematic analysis techniques to examine the experiences of 33 FIFO workers (22 male and 11 female) in the oil and gas, mining and construction sectors, and 28 FIFO family members (two male and 26 female). Unlike other studies, 15 (ten male and five female) former FIFO workers were also included. Arnold (1995), in her review of the FIFO literature, noted that the majority of studies that used survey techniques were conducted with ‘survivor’ populations, that is, those who currently had FIFO employment. She concluded the failure to include people who had left FIFO employment and new-starters to FIFO might lead to surveys to “over-estimate the acceptance of long distance commuting. Such over-estimation presents a rosy picture which conceals the problems faced by inexperienced commuters” (p. 55).

Based on the experiences of the participants, Watts proposed a four stage model, described as the “Continuum of Emotions”, to explain individual workers’ adaptation to the lifestyle (see Figure 6). The duration of this adaptation process is mediated by various factors such as the strength of relationships, personality and availability of support. The first stage “changing concepts of self identity” (p. 62) is characterised by emotions such as

a sense of living in two separate worlds, dissociation from ‘normal’ life patterns, the freedom to move away from responsibilities and a change in work ethic related to a feeling of living more of life at work. The second stage “changing emotions” (p. 63) includes amongst others, feelings of loneliness and depression, loss and grief associated with being away, but also empowerment of the spouse left at home and resurgence of independence. “Changing relationships”, stage three (p. 66) includes feelings of strain in some marital relationships particularly associated with the changing roles in the household, but for other households a strengthening in their relationships. The final stage “acceptance or rejection” (p. 69) describes the categories of eventual acceptance or rejection of FIFO that result from the deeper understandings by FIFO workers and their families of the cost and benefits associated with the lifestyle. According to the model during this final stage people either (1) accept and enjoy the lifestyle, (2) accept and make the best of the situation, (3) accept it in the short term but limit the time they plan to do it, or (4) accept but passively reject FIFO.

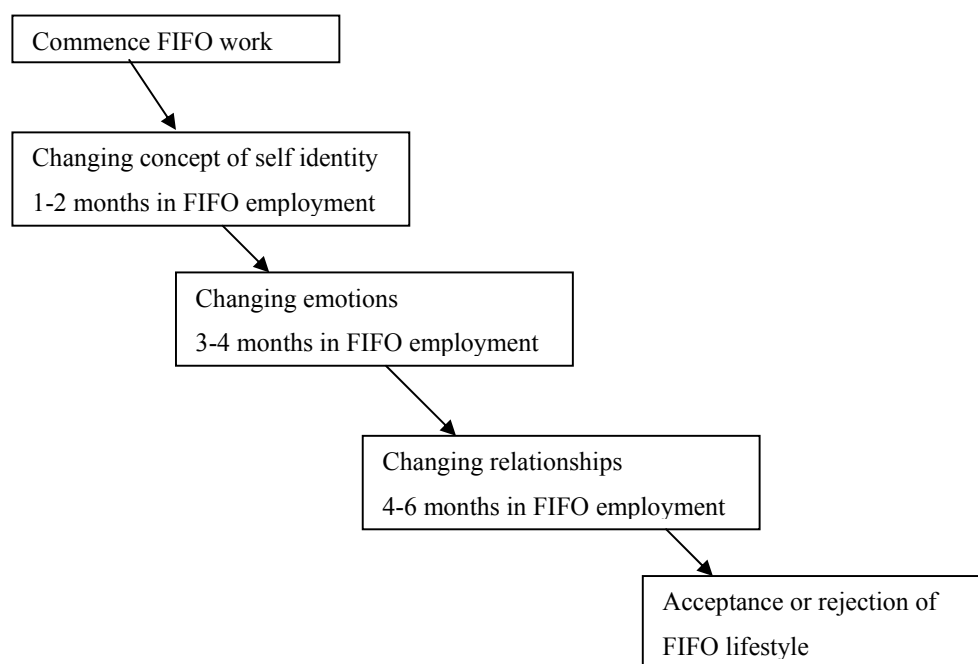


Figure 6. Watts Continuum of Emotions: FIFO workers adaptation to the FIFO lifestyle (Watts, 2004, p.73)

In keeping with other research findings, Watts concluded the positive impacts of the FIFO lifestyle included enhanced relationships for couples as a result of the time together, role expansion within relationships, and the growth of personal coping skills. Enhanced career opportunities and financial gains were also valued. Negative impacts for some FIFO workers while they were away included feelings of loneliness and isolation. Some also experienced guilt at leaving the family. This was associated with a sense of abandonment of responsibilities. Watts cited evidence of individual depression and marital and family dysfunction associated with longer rosters and poor communication, however the prevalence of these problems was not reported. Similar to Keown (2005), Watts also identified evidence of possible substance abuse amongst workers which could impact on individual and family wellbeing.

In summary, these investigations into the impacts of FIFO employment on couples' relationships support many of the earlier findings. The majority of couples generally accepted and adapted to the lifestyle. In particular, they valued the financial rewards and the extended periods of time together. However, there was some evidence that lifestyle might be more stressful for the at-home partner. Issues for the at-home partner included fatigue associated with long periods of sole parenting and caring for the home, loneliness and limited access to support. There was evidence of the moderating role of factors such as roster, previous FIFO experience, age of children, spouse's employment outside of the home, and life stage.

FIFO families

A small number of studies have examined the impact of FIFO employment on the wellbeing of children and families (Beach, 1999; Gallegos, 2006; Kaczmarek & Sibbel, 2008; Macbeth, 2008; Sibbel, 2001). Beach (1999) conducted a qualitative study that examined the impact of a 4/1 (four weeks away/ one week home) roster on ten Australian miners and their families. Partners indicated that the "repeated cycles of long separations and short reunions generated a high level of conflict between work and home" (p. 289) which altered the family structure and made it unstable. Furthermore, families with pre-school and primary school-aged children reported the most difficulties adapting to this lifestyle. All families in the study believed that a shorter roster cycle (i.e., more time at

home and less time away) would enable them to function better as a family unit. These findings of life stage effects for partners of FIFO employees support those of Gent, (2004), Reynolds (2004), and Taylor (2006).

In an exploratory study of the impacts of regular father absence on the primary school aged children of FIFO mine workers, Sibbel (2001) found no significant differences on measures of depressive symptomatology, anxiety and perceptions of family function compared with those of a non-FIFO community sample matched on age and gender. However, the home-based mothers reported less healthy perceptions of family function than the community sample in the areas of family roles and behaviour control. In addition, they expressed concern with child-father attachment, availability of communication, maintaining relationships, roles within the family and fears for safety while their partners were away. In a further study, Kaczmarek and Sibbel (2008) used identical measures to investigate the effects of employment-related father absence and mothers' perceptions of family functioning with a sample of primary school-aged children of FIFO employees, children whose fathers were in the military and a community sample of children whose fathers' employment was neither mining nor military based, and who did not have extended periods of absence from home. Results indicated that there were no significant differences between the groups on all measures of child well-being, and all groups were functioning at healthy levels. However, similar to Sibbel, mothers from the FIFO families reported significantly more stress than the military and community groups with respect to communication, support and behaviour control within the family. Thus, despite mothers' perceptions of disruption to family routine, the well-being of children in this small sample was not affected.

Macbeth's (2008) investigations with male teenagers who had a FIFO father found those children were aware of the benefits associated with the FIFO lifestyle including the opportunities afforded by the good income, as well as the good quality of interactions with their fathers resulting from the stretches of time at home. Some believed the separation between work and home allowed them to have stronger relationships with their fathers and described these relationships as no different from those of their friends who had non-FIFO dads. A number were aware of negative community attitudes to FIFO and some reported

that FIFO could at times be more stressful for their at home parent. In general they described being used to FIFO as their family's normal way of living (Macbeth, 2008).

In contrast to other research, Gallegos (2006) based her survey on the positive coping experiences of 32 two parent off-shore oil and gas and land-based mining FIFO families who had at least one child under six years of age. This study concluded that those families who successfully adapted to FIFO developed strategies to manage the allocation of certain decision-making roles within the family such as financial, parenting and household tasks. In common, with Reynolds (2004) and Taylor (2006), Gallegos concluded the flexibility of these roles to adjust to changing family circumstances, (e.g., the birth of a baby or changing ability of children to share in household tasks) was associated with the families' successful coping with the FIFO lifestyle. Other studies (e.g., Gent, 2004; Reynolds, 2004) revealed that families with younger children can find FIFO more difficult, however, Gallegos' study of families with children under six years of age demonstrates the uniqueness of individual families' experiences of FIFO and the diversity of coping strategies they employ. In support of Watts' (2004) model of adaptation to FIFO, Gallegos reported families needed to allow time to adjust to FIFO and that the first few months were probably the hardest. There was also support for the notion of the "golden handcuff", as described earlier in this review, and its implications for ongoing family adaptation to the lifestyle (Adams, 1991; Gillies, et al., 1997).

Gallegos (2006) proposed two models of the cycle of emotions to explain how families adjust to the regular comings and goings of the FIFO worker and the accompanying transitions in and out of the family. Based on a two and one roster in which the employee worked one week of 12 hour day shifts, one week of 12 hour night shifts followed by one week at home these models describe the emotions associated with the adjustments family members go through. The first model as presented in *Figure 7* relates to the range of emotions experienced by FIFO fathers as they go through the FIFO cycle.

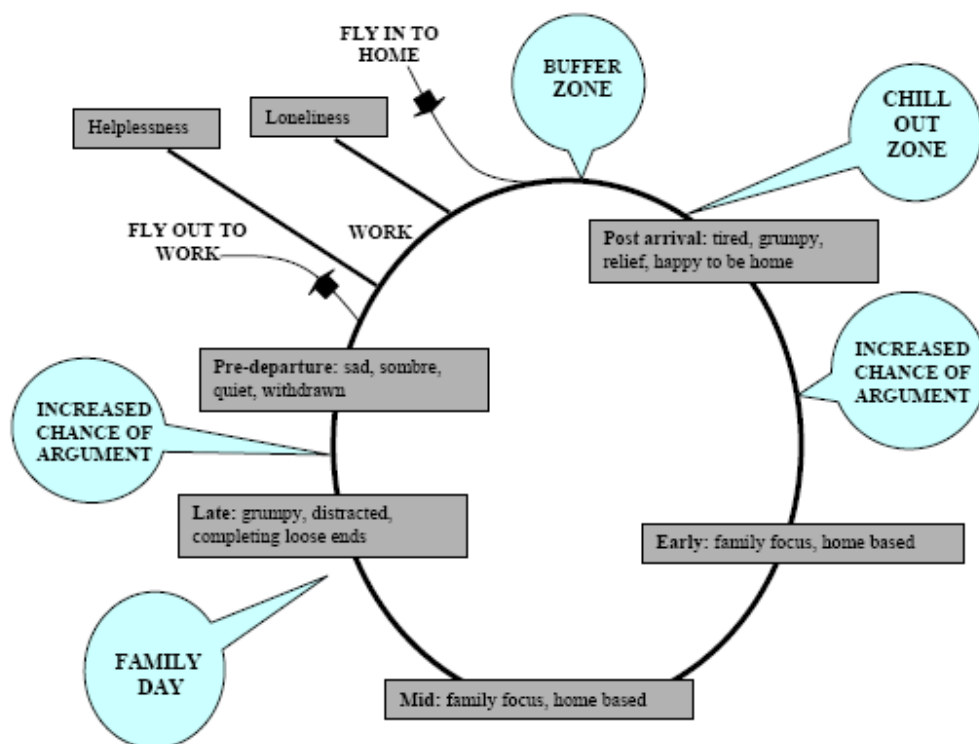


Figure 7. Gallegos' (2006) Model of the range of emotions experienced by FIFO fathers during the FIFO cycle (p. 24).

The second model as illustrated in *Figure 8* describes the range of emotions experienced by the partner at home during the FIFO cycle.

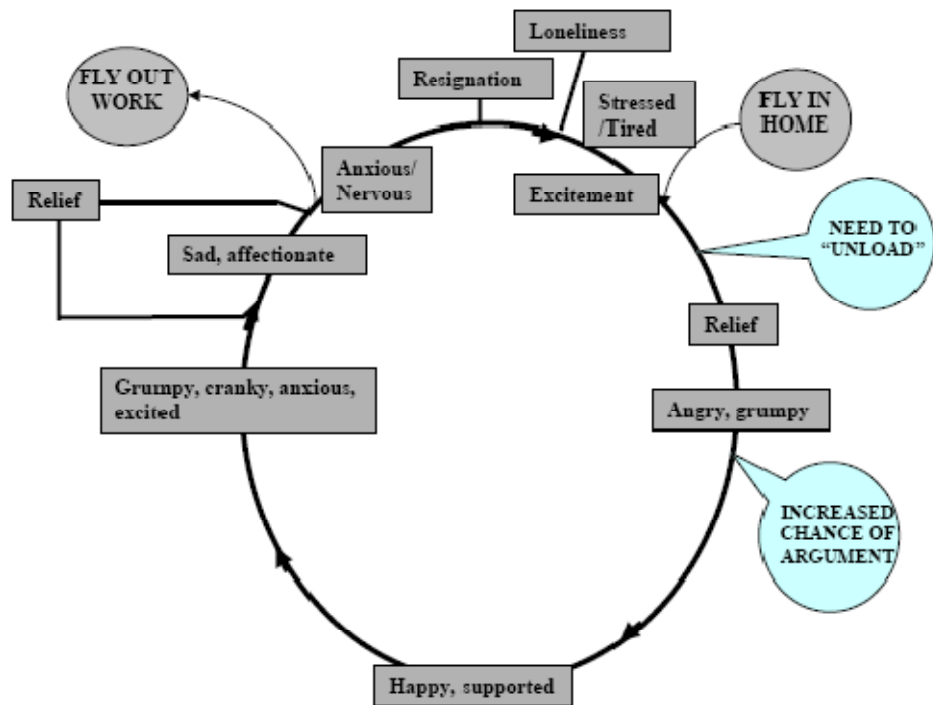


Figure 8. Gallegos' (2006) Model of the range of emotions experienced by FIFO mothers during the FIFO cycle (p. 30).

Gallegos' (2006) models illustrate emotional processes that have previously been documented in other studies of FIFO employees and their families (e.g., Arnold, 1995; Reynolds, 2004; Storey & Shrimpton, 1989; Taylor, 2006). They summarise the differences and commonalities between the emotional experiences of FIFO employees and the at home partners, particularly at the times of transition in and out of the family, and how the interactions between these experiences and adjustments to changed roles can impact on the household. The emotions associated with these transitions can be exacerbated by tiredness and anticipation of loneliness. For example, the times immediately following arrival home from the site and just prior to departure are highlighted as potentially the periods of greatest stress for FIFO employees and their families as the emotions associated with these transitions can be exacerbated by fatigue and anticipation of loneliness (Gallegos). Thus, on arrival home the worker's sense of

relief at being home, coupled with extreme fatigue resulting from two weeks of 12 hour work days interacts with his partner's relief that he is home and her need to 'unload' all of her experiences and issues from the previous two weeks of coping with the family on her own. The needs of both partners at this time are different and if unresolved can result in tension between them. Similarly, just prior to leaving both partners experience other, often conflicting emotions, that can cause tension in the relationship. The FIFO partner may be beginning to withdraw from home life and focus on work, whereas the at-home partner may be noticing the effects of their partner's withdrawal, feeling sad about the imminent departure, but also wanting the partner to go so the household can return to their 'normal routine'.

Gallegos' (2006) models focus particularly on the negative emotions and as such do not describe the whole range of emotions experienced by FIFO workers and their families. For example, she labels the time at work as a time when employees feel helpless and lonely, however other studies (e.g., Gent, 2004; Pirotta, 2006; Sibbel, 2004) have found that employees can experience a range of both positive and negative emotions while on site. Thus in addition to the loneliness and helplessness depicted by Gallegos they also can experience feelings of relief at not having to deal with family issues for a period of time (Sibbel, 2004), satisfaction associated with the separation of work and home lives, thus being able to focus on work tasks (Gent, 2004) and a sense of belonging associated with being part of the work community (Pirotta, 2006). Similarly, Reynolds (2004) found the at home partners described positive emotions associated with increased independence when their partner was away.

While these models do provide some understandings of the cycle of emotions experienced by FIFO employees and their families, they are based on a small sample (32 families), and a particular roster (2/1) and have not been validated beyond this sample. They are also based on families in which the father was the FIFO employee and the mother the at-home partner. However, Gallegos (2006) acknowledged that "many participants described an emotional cycle and while not all families experienced this pattern in its entirety, all couples described components of this emotional range" (p. 23).

Choosing FIFO

There is evidence that people remain in FIFO employment for differing amounts of time and for different reasons (Beach, Brereton & Cliff, 2003). For example, a survey of professional FIFO employees found that while they did not necessarily dislike the FIFO lifestyle, over time it “wore them out”, and that they left FIFO employment as a result of this “FIFO fatigue” (Beach et al.). Sibbel and Kaczmarek (2004) investigated how residential and FIFO mining employees and their partners chose one mining lifestyle (i.e., residential or FIFO) over the other. Their results indicated that employees generally made informed choices based both on employment satisfaction which includes remuneration, working hours and opportunities for training and advancement, and on the developmental needs of family members, including children’s educational needs, availability of family support, health services, and employment and career opportunities for family members. The salience of these needs varied according to the family’s position in the family life-cycle. At certain stages, one particular mining lifestyle option might be perceived as being more suitable to meet the family’s developmental needs than at another time. However, while some people would move between the two lifestyles others would only ever consider one option, that is FIFO or residential. Only employees were included in this project and as such the results do not reflect how partners contribute to these life choices.

Other organisational studies

As stated previously in this section, other research has investigated FIFO related organisational issues such as job satisfaction (e.g., Brereton et al., 2006), work performance, safety, and employee turnover, attraction and retention (e.g., Beach et al., 2003), and changes in FIFO work attitudes and practices (Graham, 2000), as well as regional implications and economic perspectives of FIFO (Maxwell, 2001; Price, 2008) using literature review and survey designs. Measures of satisfaction with various aspects of FIFO employment have been included in a number of general industry-based surveys of mining employee professionals (e.g., Beach et al., 2003; Brereton et al., 2005). In particular, these surveys found that in comparison with residential professionals FIFO employees were more likely to express intentions to change employers because of the strain FIFO employment puts on their personal lives than were residential employees.

Indeed for both residential and FIFO employees maintaining a balance between work and home lives was considered the single most important consideration when choosing a job (Brereton et al.).

Conclusion

The preceding review indicates that despite the different employment conditions and research frameworks used, there was some consistency across the findings. The majority of studies were premised on the notion that the wellbeing of employees and their families was at risk because of the strain resulting from regular work-related absence from home that was not “normal”. There was, however no evidence of an “intermittent husband syndrome”, and indeed, many employees and their families reported overall satisfaction with the lifestyle. Nonetheless, a number of stressors relating to relationships at work and at home, living in the work environment, adjustment to the comings and goings, loneliness and social isolation, and safety concerns were identified. There was some suggestion that the FIFO lifestyle could be more difficult and demanding for the partner at home. There was also evidence throughout this review that a number of individual, employer, workplace and family contextual factors such as profile of absence, life stage, work conditions and access to personal and environmental resources contribute to successful adaptation and wellbeing. However, due to the small number of studies undertaken to date and the subsequent paucity of substantive theorizing, the processes through which these impacts occur continue to be poorly understood.

Although each of the reviewed studies investigated a different profile of oil and gas and/or mining FIFO employees or their families, including male employees (Keown, 2006) and/or female employees (Gent, 2004; Pirotta, 2006), FIFO couples (Gallegos, 2006; Taylor, 2006), partners of employees (Reynolds, 2004), and children of employees (Macbeth, 2008; Sibbel, 2001) using various methods, no research to date has specifically investigated the psychosocial wellbeing of land-based mining FIFO employees and their partners in relation to established norms and to each other, or determined those resources or contextual factors which influence their adaptation to the lifestyle and hence their wellbeing. This current study therefore aimed to determine and compare the psychosocial wellbeing of Western Australia FIFO employees and their partners at the individual,

relational and family levels. Further, it sought to further describe and develop an understanding of the role of those various individual, employer, family and other contextual factors and resources in facilitating and inhibiting the wellbeing of fly-in/fly-out employees and their partners. The following chapter describes the research framework of the study.

Chapter 4

Research Design

This chapter establishes the research framework for the current study and provides an overview of the multi-methods design, including the research questions for both the qualitative and quantitative phases. The role of the researcher, the study's relevance for community psychology and ethical considerations are also discussed.

Chapter 4

Research Design

Introduction

This chapter first describes the research framework that guided this investigation into the wellbeing of FIFO mining employees and their families and provides the strengths and details of the multi-methods design used. Next, the study's relevance to the field of community psychology is discussed, and finally, the role of the researcher and ethical considerations are considered.

Research Framework

The research paradigm

The research paradigm is the interpretive framework or basic set of beliefs, assumptions, understandings and values about the social world (the nature of knowledge and reality) that provide the philosophical and conceptual framework that guides the research process and position the researcher within this process¹¹ (Denzin & Lincoln, 2003; Greene & Caracelli, 2003; Guba & Lincoln, 1994; Mertens, 2003). Specifying the research framework acknowledges the impact of the researcher's world views and values on the research process (Dokecki, 1992; Ponterotto & Greiger, 1999; Sarason, 1981; Wicker, 1985).

Although there are numerous classification schemes, the three major interpretive paradigms posited as currently guiding behavioural and social research are the positivist/post-positivist, constructivist/interpretive, and transformative/emancipatory frameworks (Guba & Lincoln, 1994; Mertens, 2003; Ponterotto, 2005). There are multiple, often overlapping forms within each of these perspectives, and they may be viewed as on a continuum rather than separate entities (Miles and Hubermann, 1988).

Psychological research has traditionally been conducted within a positivist or a post-positivist paradigm (Burgess-Limerick & Burgess-Limerick, 1998; Denzin & Lincoln, 2000; Gergen, 2001; Ponterotto, 05).¹² Positivism relies on an ontology of a single

¹¹ See Morgan (2007) for a detailed discussion on the development of paradigms in the social sciences

¹² See Gergen (2001) and Ponterotto (2005) for a more detailed discussion

knowable reality which can be discovered through hypothesis testing, and on an objective epistemology in which the knower and known remain independent of each other (Mertens, 2003). It relies on experimental and quasi-experimental “quantitative” methods to understand and predict the social world. The inquiry aims to be value free and to provide time and context free generalisations. Similarly, the postpositivist framework accepts a single reality and generally relies on quantitative methods, however, it also acknowledges that researchers bring their own values to inquiry. Both adhere to the hypothetico-deductive method using true experiments or quasi-experimental design involving systematic observation and description of phenomenon, hypothesis testing, and inferential statistics aiming to predict and control phenomena. Positivism relies on “theory verification”, while post-positivism uses “theory falsification” (Lincoln & Guba, 2000, p. 107). The language used is precise, scientific, objective and detached, with no personal voice.

During the latter half of the twentieth century, dissatisfaction with mainstream psychology’s reliance on this narrow paradigmatic focus became increasingly evident (Bishop, Sonn, Drew, & Contos, 2002). There was concern that psychology could become isolated “from the major intellectual and global transformations of the past half century” (Gergen, 2001, p. 803), thus limiting the profession’s ability to significantly contribute to the increasingly complex world (Ponterotto, 2005, p. 126). In particular, adherence to the positivist tradition and the limitations of “one way of knowing” were recognised as major challenges to the effectiveness and relevance of psychology to the promotion of wellbeing in today’s global society (Gergen, 2001; Trickett, Barone, & Buchanan, 1996). Subsequently, in common with other social sciences, postmodern perspectives, both constructivist/interpretivist and transformative/emancipatory, together with the associated qualitative methodologies became increasingly evident in psychological research (Gergen, 2001; Hanson, Creswell, Plano Clark, Petska, & Creswell, 2005). A postmodern ontology understands that there are multiple and dynamic realities which are socially, historically and politically constructed.

The constructivist/interpretive stance acknowledges that people shape their own social worlds and meanings through interactions with others, and that these meanings are

continually constructed and re-constructed (Mertens, 2003; Ponterotto, 2005), thus challenging the traditional psychology view of research. Rather than a single reality that can be understood through value free inquiry, there are multiple realities that are apprehendable and equally valid. In addition, the researcher is acknowledged as an inherent part of a research process which is no longer viewed as value neutral. This assumption of shared meanings implies that psychological phenomena are better understood through understanding individuals' constructions of their own worlds (Gergen, 2001; Burgess-Limerick & Burgess-Limerick, 1998).

Transformative/emancipatory positions also incorporate a critical perspective that challenges the status quo (Ponterotto, 2005). In common with the constructivist stand, they acknowledge multiple socially constructed realities; however, this research aims to facilitate emancipation of oppressed and marginalised groups. The research focuses on and analyses power relations that privilege particular groups in society with the aim of empowerment and addressing issues of social justice (Rappaport, 1990).

Thus, in recognition of the increasing complexity of addressing psychological phenomena there has been a gradual widening of the paradigmatic base and an increased acceptance of multiple inquiry methods within psychological research and practice (Denscombe, 2008; Fassinger, 2005; Morgan, 2007). However, despite this increasing acceptance of alternate paradigms and world views, both positivist/post-positivist as well as constructivist and emancipatory approaches and their associated methodologies continued to be regarded as mutually exclusive by many. That is, quantitative methodologies with their reliance on notions of a single knowable reality were seen as appropriate only to positivist frameworks, whereas qualitative methodologies with their understanding of socially, politically and historically constructed realities were regarded as relevant for the constructivist and emancipatory paradigms (Guba & Lincoln, 1990, 1994; Tashakkori and Teddlie, 1998). Some researchers (e.g., Brewer & Hunter, 1989; Morse, 2003) argued that the paradigms that underlie the methods are incompatible, therefore psychological research could only be legitimately situated within one framework or the other, and consequently restricted to either qualitative or to quantitative methods of inquiry; thus regarding methodological pluralism as untenable (Giddings, 2006; Ponterotto,

2005). Adherence to this “incompatibility thesis” accordingly limited the researcher to a single methodology depending on the world view guiding the research.

This stance, however, has been challenged on a number of levels (Giddings, 2006; Teddlie & Tashakkori, 2003) and increasingly there is evidence of a greater acceptance and use of a mixed or multi-methods approach, that is, using both qualitative and quantitative methods in a single study (Collins, Onwuegbuzie, & Jiao, 2007; Creswell, 2003; Rappaport & Stewart, 1997, Wilkinson, 2000), in for example, the fields of community psychology (Darlaston-Jones, 2005; Rappaport, 1990; Wicker, 1990), and counselling psychology (Hanson et al., 2005; Ponterotto & Grieger, 1999), work and family (Agazio, Ephraim, Flaherty, & Gurney, 2002; Neal, Hammer & Morgan, 2006) and evaluation research (Creswell, 2003; Tashakkori & Teddlie, 2003). Indeed, the first international conference focussing on mixed methods research was held in 2005 (Giddings, 2006) and the Journal of Mixed Methods Research was launched in 2007 (Tashakkori & Creswell, 2007). Multi-method designs are broadly defined “as research in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or a program of inquiry” (Tashakkori & Creswell, 2007, p.4).

Multi-method designs

Multi-method research designs are “relatively new” as a distinct research approach in the human and social sciences and as such a brief history of its development and description of the method and its appropriateness for this investigation into the impacts of FIFO employment follows (Creswell, 2003; Neal, Hammer & Morgan, 2006; Tashakkori & Creswell, 2007).

Education and some social science studies have used combined research methods in their data collection since the 1930s, however, the more wide spread interest in the approach is commonly attributed to the use of combined methods by Campbell and Fisk in 1959, who used a "multimethod-multitrait matrix" of data from multiple quantitative methods to study the validity of psychological traits. Multiple methods were employed to ensure the variance was due to the trait in question rather than to the method that was used (Creswell, 2002; Hanson et al. 2005; Tashakkori & Teddlie, 1998). Recognising that all

research methods have limitations, this approach of using multiple methods of data collection (for example, combining qualitative data such as interviews with quantitative methods such as surveys), was subsequently employed by other researchers on the notion that the use of multiple methods would limit the inherent biases in each technique. It provided a means of checking convergence across both methods - the process of triangulation. In addition to triangulation, a review of 57 multi-methods studies conducted during the 1980s listed the purposes of using a multi-methods design as (a) complementarity (discovering overlapping and differing aspects of the phenomenon), (b) initiation (discovering new perspectives, paradoxes or contradictions), (c) development (in sequential designs the methods inform each other) and (d) expansion (each method adds to the breadth and scope of the investigation) (Creswell, 2003; Green, Caracelli & Graham, 1989; Tashakkori & Teddlie, 1998).

More recently, it has been proposed that multi-methods can also be used to better understand the research question by converging numeric trends from quantitative data with the more specific detail from qualitative inquiry. They are also used to identify variables and constructs that are subsequently measured through the use of existing instruments or for the development of new instruments. Furthermore, they may be employed to obtain statistical quantitative data and results from a sample of the population which are subsequently used to identify individuals with whom to expand on results through qualitative inquiry. Finally, they can be applied to convey the needs of marginalised or underrepresented groups or individuals, for example they have been used to advantage in transformative studies which advocate and seek social change for groups such as women or ethnic minorities who are marginalised in society (Hanson et al., 2005, Mertens, 2003; Murray, 1998).

Despite their increasing acceptance and use multi-methods designs present a number of challenges to the researcher. These include the need for extensive data collection, the time-intensive nature of multi-method analyses, the need for the researcher to be competent in both qualitative and quantitative forms of research and issues with integration of the findings (Creswell, 2003; Giddings, 2006; Neal, Hammer, & Morgan, 2006). Furthermore, the legitimacy of this type of research design may be questioned on

the basis of the compatibility of a researcher's worldviews and the choice of research methods, that is, the paradigm/method fit (Creswell; Giddings; Hanson et al, 2005; Miles & Huberman 1994; Tashakkori & Teddlie, 1998). It has been argued that a researcher must hold the particular worldview associated with the research method being used, and as a single world view appropriate to both qualitative and quantitative methodologies does not exist, it can be concluded that multi-method research is philosophically untenable (Creswell; Tashakkori & Teddlie). Moreover, it has been contended that the positivist/postpositivist paradigms can only use quantitative methods while qualitative methods are confined to those who hold constructivist/interpretivist or emancipatory worldviews.

This stance, however, has been challenged from a number of perspectives (Denscombe, 2008; Teddlie & Tashakkori, 2003). For example, Reichardt and Cook (1979) argued that this position creates a false dichotomy. Their acceptance of the existence of both objective and subjective realities meant that the paradigms were indeed compatible. Further, the dialectic stance values all paradigms but understands them to be only partial worldviews, positing that paradigms themselves are “social constructions, historically and culturally embedded discourse practices, and therefore neither inviolate nor unchanging, but rather highly mutable and dynamic” (Greene and Caracelli, 2003 p. 95). As such, they are not intrinsically bound to one particular type of research method but are intentionally blended in the belief that the tensions that arise allow a better understanding of the phenomenon under investigation (Giddings, 2006; Hammersley, 1992). These multiple, diverse perspectives have been deemed necessary to understand our increasingly pluralistic society (Rappaport, 1990). In particular, the transformatory/emancipatory paradigm values multi-methods approaches in the creation of a more just and democratic society (Mertens, 2003, Prilleltensky, 2001). Similarly, others (e.g., Schwandt, 2006) support the view that while some research methods are more closely aligned with one worldview rather than the other, they are not exclusively associated with a particular worldview, and as such, a multi-methods design is legitimate (Johnson, Onwuegbuzie, & Turner, 2007). Moreover, Teddlie and Tashakkori (2003) described support for the use of multi-method designs on the bases of first, a belief in the

independence of method and paradigm which allows for a-paradigmatic designs, and second, a belief in the complementary strengths position which allows for the legitimacy of a multi-methods design if each of the methods is kept separate from the other to preserve the strengths of each paradigm. The focus is on the method rather than on methodology (Hanson et al., 2005; Morse, 2003).

Finally, the use of multi-methods has been justified on the basis of methodological pragmatism (Denscombe, 2008). Drawing on ideas first mooted by, for example, William James, George Herbert and John Dewey (see Morgan, 2007) this framework acknowledges the contextual nature of knowledge and emphasises shared meaning, and as such gives precedence to the research question – thus allowing methodological pluralism (Barker & Pistrang, 2005; Kelly 1990; Morgan, 2007). It recognises that a variety of approaches is needed to understand complex phenomena and to be responsive to people's contexts, and accepts that qualitative and quantitative methodologies are not necessarily bound to a particular world view (Creswell, Plano Clark, Gutmann, & Hanson, 2003). Thus the legitimacy of the use of multi-method research has been established from a number of different perspectives.

In summary, the pluralistic approach assigns greatest importance to the research questions, giving them predominance thus providing opportunities to interweave viewpoints, to incorporate multiple perspectives in an integrated approach that acknowledges the benefits and limitations of both methodologies (Tashakkori & Teddlie, 2003; Wilkinson, 2000).

A Research Framework for Community Psychology

As discussed in Chapter 1, community psychology is concerned with the relational aspects of individuals and the communities and societies of which they are part. Research within community psychology locates individuals and communities in their socio-historical contexts and aims to promote individual and community psychological wellbeing through effecting social change (Bishop, Sonn, Fisher, & Drew, 2001; Dalton, Elias, & Wandersman, 2001; Gridley & Breen, 2007; Pretorius-Heuchaert & Ahmed 2001). This contextualist approach grounds the research in the community's terms, it legitimises their world views and values their experiences (Bishop, Sonn et al., 2002; Bond, 1990; Kingry-

Westergaard & Kelly, 1990). It recognises that communities are complex multilevel systems and as such require a comprehensive research framework that incorporates an ecological perspective. It also endorses the use of conceptually integrated multi-methods chosen on the basis of their ability to address the particular research question/s (Dokecki, 1992; Shadish, 1990).

Knowledge about how these systems operate aids in the understanding of the multiple levels of psychosocial issues and acknowledges the perspectives of all of the different stakeholders in a social system. As such, an ecological approach gives precedence to the research question and can be empirical, exploratory, multivariate, multi-level and systematic (Kingry-Westergaard & Kelly, 1990). It does not, however, limit the understandings to positive or negative consequences (Grzywacz & Marks, 2000).

An ecological systems perspective, as discussed in Chapter 2, provides an appropriate framework for this community psychology investigation into the impacts of FIFO mining employment on employees and their families. In congruence with community psychology principles, it recognises the need to understand people in context requiring a collaborative, contextual style of investigation (Kingry-Westergaard & Kelly, 1990; Toro, Trickett, Wall & Salem, 1991). It also acknowledges the social construction of meaning, the shared meanings of the interaction between researcher and the researched (Tolan, Chertok, Keys & Jason, 1991). When applied to FIFO employees and their partners it allows understandings of the impacts of a FIFO lifestyle through the constructions of the people who are experiencing it and in the context of the systems in which they live (Toro et al.). The experiences of FIFO employees are a result of complex interactions between FIFO employees, their families, the communities of which they are part as well as various company and political policies and processes. To address these complexities a multi-method approach was used combining both quantitative and qualitative processes as outlined below.

Research Design

The broad objectives of this research were to determine the wellbeing of Western Australia FIFO employees and their partners at the individual, relational and family levels,

to describe their experiences of FIFO and to develop an understanding of the contextual factors which impact on their wellbeing.

A number of typologies of multi-methods research have been proposed (see for example Creswell, 1994; Morse, 2003; Neil, Hammer, & Morgan, 2006; Tashakkori & Teddlie, 2003). These are based on issues such as the sequence in which the data are collected and the results integrated, the priority assigned to each method, and the function and purpose of the research. This exploratory community psychology study incorporated a nested concurrent multi-method systemic research framework with a variety of data sources to facilitate understanding, analysis and generation of theory with respect to the experiences and wellbeing of FIFO employees and their partners at the individual, relational and family levels (Cutcliffe, 2000; Docecki, 1992; Hanson et al, 2005; Teddlie and Tashakkori, 2003).

Both quantitative and qualitative methods were employed in two discrete components (Cutcliffe, 2000; Morse, 2003; Neil, Hammer & Morgan, 2006), as presented in Figure 9. Priority was given to the qualitative component. The findings from the quantitative component informed the qualitative component as illustrated in Figure 9. Each method was matched to a specific purpose within the overall study thus providing a more comprehensive understanding of the complex phenomena of the experience of FIFO employment (Barker & Pistrang, 2005; Mertens, 2003; Morse).



Figure 9. Overview of Discrete Stages of the Study

This methodologically pluralistic approach facilitated the study's responsiveness to the needs of the broader FIFO community, incorporating employees', their partners', and families' needs, and to a lesser extent those of the corporate and bureaucratic sectors, thus acknowledging the different interpretive communities within the FIFO domain (Bishop, Higgins, Casella, & Contos, 2002).

The quantitative measures of psychological, relational and perceptions of family wellbeing using standardised measures provided an overview of the impact of FIFO employment on the psychosocial wellbeing of FIFO employees and their partners. It incorporated an approach that used language and data that is particularly relevant and meaningful to the corporate and bureaucratic stakeholders whose policies and practices

impact on the employment conditions, and hence the wellbeing, of FIFO employees and their families (Bishop, Higgins et al., 2002; Kossek & Friede, 2006). In particular, it allowed comparison with normative data from large scale studies on individual, family and community wellbeing.

The qualitative component of the study allowed exploration and understanding of how FIFO employees and their partners interpret and make sense of the lifestyle, and the role of individual and social resources in their adaptation to the lifestyle. This recognized that how people interpret and construct their experiences is dependent on the contexts in which they occur, and allowed substantive theorizing about these phenomena (Bishop, Higgins et al. 2002; Prilleltensky, 2001; Prilleltensky & Nelson, 1997). The use of different but complementary methods aimed to provide a more socially responsible and responsive knowledge of FIFO by valuing the experiences and legitimizing the perspectives of different members of the FIFO community. Understanding how FIFO is experienced by employees and their partners, and identifying the contextual factors that influence their wellbeing can contribute to recommendations for policy and the provision of support for fly-in/fly-out employees and their partners.

Each study is presented as a conceptual whole with explicit rationale thus avoiding confounding the conclusions through epistemological differences (Creswell, 1998; Cutcliffe, 2000; Neil, Hammer & Morgan, 2006). The design, validity and reliability and procedure of each of the methods used in this multi-methods design are addressed separately in the specific method chapters for each component.

Quantitative phase

Purpose statement and research aims

In response to earlier FIFO research findings as reviewed in Chapter 3, and in particular those of Gent (2004) and Keown (2005), the quantitative component aimed to further explore the impacts of a FIFO lifestyle on wellbeing at individual and relational levels using measures of psychological and relationship wellbeing and family function. The research questions were as follows:

Question 1: What is the level of psychological wellbeing of FIFO employees and their partners as measured by the GHQ 12?

- Question 2: What is the level of relationship satisfaction of FIFO employees and their partners as measured by the DAS?
- Question 3: What are the levels of family function as perceived by FIFO employees and their partners as measured by the FAD?
- Question 4: Do FIFO employees and their partners differ in terms of their reported psychological wellbeing, relationship satisfaction and perceptions of family function as measured by the GHQ 12, the DAS and the FAD?
- Question 5: Do the levels of psychological well-being and relationship satisfaction of FIFO employees and partners as measured by the GHQ 12 and the DAS differ according to family type?
- Question 6: Do the levels psychological wellbeing, relationship satisfaction and perceptions of family function of FIFO employees and partners as measured by the GHQ 12, the DAS and the FAD differ according to profile of employee absence (i.e. the roster)?

Quantitative design

A cross-sectional design with two naturally occurring groups of FIFO employees (employees), and partners of FIFO employees (partners) was used in this study. Standardised instruments and a survey as detailed in Chapter 5 were used to determine their levels of psychological and relationship wellbeing, and perceptions of family function.

Qualitative phase

Purpose statement and research aims

The broad aims of the qualitative section were to explore the experiences of fly-in/fly-out employees and their partners in order to develop an understanding of the role of contextual factors such as resources in supporting employees and their partners in coping with and adapting to the lifestyle.

The specific research questions were as follows:

1. What are the experiences of fly-in/fly-out employment of employees and their partners?
2. What factors influence the wellbeing of FIFO employees and their partners?

3. How do these factors influence the wellbeing of FIFO employees and their partners?
4. What are the implications at the legislative, company, community and family levels in supporting FIFO employees and their partners?

Qualitative design

A constructivist grounded theory approach was used in this study into the experiences of FIFO employees and their partners because the aims were exploratory, applied and situated in a non-manipulated setting (Charmaz, 2000, 2003; Creswell, 2005; Strauss, 1997; Strauss & Corbin, 1998). The qualitative method is described in detail in Chapter 6.

Multiple Perspectives

A reflective iterative-generative process was employed in this study, and as such, required acknowledgement of my position in the research process and the impact of my values, personal history and world views on the collection, analyses and reporting of the data (Bishop et al., 2002). In particular, I was mindful that my earlier experiences as the “at home” partner of a FIFO employee, my current professional and personal involvement in the mining industry, and my attitudes to the global impacts of the Australian and international resource industries’ economic, environmental and social policies and practices would impact on the research process.

To facilitate this personal reflexivity I maintained an ongoing journal which documented the research process, including my thoughts, ideas and reactions. My ongoing scrutiny of and reflection on these entries contributed to the rigour and integrity of the research process (Hill, Bond, Mulvey, & Terenzio, 2000). In addition, I engaged in ongoing conversations and discussions about my reflections with colleagues who have knowledge of the process, thus further clarifying my understandings. This helped me articulate my position and to reflect on its impact on my attempts to understand and interpret the experiences of others in the FIFO community. While my primary role within this study was that of researcher, my other life roles as consultant to the mining industry, partner, parent and close relative of mining employees, and grandmother to children of a

FIFO employee allowed and indeed compelled me to consider multiple perspectives which at times were contradictory.

Finally, throughout the process I held discussions with the informants and other members of the FIFO community to ensure my findings were indeed reflective of their experiences. This helped to reconcile some differences between my world views and those of the different sectors of the mining community and facilitated a shared understanding that is representative of a variety of perspectives.

Ethical Considerations

The study was subject to and satisfied the ethical processes for research involving human informants as required by the Edith Cowan University Ethics Committee. Issues regarding informed consent were addressed by providing informants with written information relevant to the nature and purpose of the study and their right to withdraw from the study.

My involvement with the mining industry on both personal and professional levels required that further ethical considerations be addressed. In particular, it was important that informants were assured of their anonymity in the process so they felt confident to share both negative and positive experiences of FIFO without fear of possible consequences. In order to protect their identity, informants were informed that no-one other than the researcher would know the names of those who participated in the study. Furthermore, informants were not referred to by name during the taped interviews, and no identifying information was included in the transcripts or databases. All participants were identified by a code known only to the researcher. The master list of participants was kept separate from the databases and the questionnaires. Additionally, as one of my supervisors had personal links with the mining industry I ensured that their identities were not revealed during supervision meetings or in any written material that was submitted for any reason.

Conclusion

This chapter established the research framework for the current study and provided an overview of the multi-methods design, including the research questions for both the qualitative and quantitative phases. The role of the researcher, the study's relevance for

community psychology and ethical considerations were also discussed. The following chapter details the method and findings of the quantitative phase of this investigation into the wellbeing of FIFO mining employees and their partners.

Chapter 5

Quantitative Phase Research Methodology

Chapter 5 describes the research process for the Quantitative Phase of the project. First the aims of the study and the associated research questions are restated. These are followed by a description of the research instruments used and the method of data collection. Details of the statistical analyses undertaken and the results are presented. Finally the results are discussed in light of the research questions and the findings obtained from previous studies.

Chapter 5

Quantitative Phase Research Methodology

Introduction

The previous chapter presented the research framework that guided this investigation into the well-being of FIFO employees and their partners, and provided details of the multi-methods design used, including an overview of each of the quantitative and qualitative phases of the project. This chapter describes the quantitative phase in detail. First, the research questions and demographic details of the research informants and their employment profiles are presented. Next the research procedure, including the quantitative measures used and analyses undertaken, is described. Finally, the results are discussed in light of findings obtained from previous studies.

The earlier review of the FIFO research literature indicated that although many employees and their families reported satisfaction with the lifestyle, a number of stressors relating to relationships at work and at home, living in the work environment, adjustment to the comings and goings, loneliness and social isolation, and safety concerns were also identified that could impact on individual, relationship and family well being (Arnold, 1995). There was some indication that the FIFO lifestyle could be more difficult and demanding for the partner at home, and evidence that a number of individual, employer, workplace and family contextual factors such as profile of absence, life stage, family type, work conditions and access to personal and environmental resources contribute to the adaptation and wellbeing of FIFO employees and their partners (Clark & Taylor, 1988; Gallegos, 2004; Keown, 2005; Pollard, 1990) In particular, profile of absence (i.e., roster) and family type (i.e., single or partnered, children or no children) have been shown to impact on individual and family experiences of FIFO employment (Beach, 1999; Gent, 2004; Kaczmarek & Sibbel, 2008; Reynolds, 2004; Storey & Shrimpton, 1989; Storey, Shrimpton, Lewis, & Clark, 1989; Taylor, Morrice, Clark, & McCann, 1985). However, due to the small number of studies undertaken to date, these impacts continue to be poorly understood. In particular, little research has specifically investigated the psychosocial wellbeing of Australian land-based mining FIFO employees and their partners in relation to each other and in relation to wider population using standardised procedures. Therefore,

in order to extend understandings of the impacts of a FIFO lifestyle on the wellbeing of employees and their families this quantitative phase of the current study aimed to determine and compare the levels of psychosocial wellbeing of Western Australia fly-in/fly-out employees and their partners using standardised measures of individual, relational and family well-being and satisfaction.

Research Questions

To determine the wellbeing of FIFO employees and their partners at the individual, relational and family levels the research questions were as follows:

- Question 1: What is the level of psychological wellbeing of FIFO employees and their partners as measured by the GHQ 12?
- Question 2: What is the level of relationship satisfaction of FIFO employees and their partners as measured by the DAS?
- Question 3: What are the levels of family function as perceived by FIFO employees and their partners as measured by the FAD?
- Question 4: Do FIFO employees and their partners differ in terms of their reported psychological wellbeing, relationship satisfaction and perceptions of family function as measured by the GHQ 12, the DAS and the FAD?
- Question 5: Do the levels of psychological well-being and relationship satisfaction of FIFO employees and partners as measured by the GHQ 12 and the DAS differ according to family type?
- Question 6: Do the levels psychological wellbeing, relationship satisfaction and perceptions of family function of FIFO employees and partners as measured by the GHQ 12, the DAS and the FAD differ according to profile of employee absence (i.e., the roster)?

Research Design

This cross-sectional study used two naturally occurring groups of FIFO employees (employees), and partners of FIFO employees (partners). Both groups completed a series of questionnaires, as detailed below, to determine their levels of psychological and relationship wellbeing, and their perceptions of their family function.

Informants

A combined total of 122 informants participated in this study, 70 males and 52 females. All resided in the south-west region of Western Australia, including suburbs of Perth, as well as south-west regional towns (e.g., Bunbury) and rural areas (e.g. Boddington). Further demographic and other information about the informants' FIFO arrangements follows. Earlier research (e.g., Beach, 1999; Gent, 2004; Sibbel & Kaczmarek, 2008) indicated length of roster cycle could impact on employees and their families' experiences of FIFO, therefore details of the informants' roster arrangements and preferences are included below.

Employees

The 90 FIFO employees included 65 males and 25 females whose ages ranged from 20 to 61 years ($M = 37.26$, $SD = 9.37$). Their number of years experience in mining and FIFO employment are detailed in Table 3.

Table 3

FIFO employees' years mining and FIFO employment

Employee work experience	Range	<i>M</i>	<i>SD</i>
Years in mining industry	2mths – 30yrs	11.82	8.75
Years working FIFO	2mths – 20yrs	5.12	4.41
Time at particular site	2mths – 7yrs	1.64	1.60

The sample was representative of both principal and contractor, and underground and surface personnel, including employees in operating, managerial, supervisory and administrative roles. Informants came from the Mining, Geology, Metallurgical, Maintenance, Occupational Health and Safety, Environmental, Human Resources, Administration and Business Development Departments of their respective employers. Specifically, their jobs included mining, mechanical and chemical engineers, geologists, metallurgists, plant and machinery operators, drillers and drillers offsiders, shot firers, fitters, auto electricians, safety and training officers, grade controllers, nurses, information technologists and surveyors.

Partners

Thirty-two partners of FIFO employees (27 females and five males) participated in this study. Their ages ranged from 21 to 58 years ($M = 38.57$, $SD = 10.29$). Twenty-two had full-time or part-time employment, two were tertiary students, one was self-employed and ten were full-time home-makers. None had worked away from home on a regular basis during the previous 12 months.

Relationship profiles: Employees and Partners

The distribution of relationship/family profiles is shown in Table 4. *Single* referred to those people who were not currently co-habiting in a long-term relationship, who were not divorced and had no children. *Couple, no children* were in a long-term relationship but were not parents. *Divorced* referred to those people who were divorced but were not currently in a relationship and did not have children living with them. A *nuclear family* consisted of biological mother, father and their child/children, while a *blended family* had a mother and father together with children from their current and/or previous relationship/s. The final category of *other type of family* comprised those families who did not fit into any of the other groups, for example a widower with 2 children. The informants' children were aged between 3 months and 40 years of age. Two of the Partners were pregnant at the time of survey.

Table 4

Frequencies of Family Types for FIFO Employee and Partner Groups

Family Type	FIFO Employees		Partners		Total	
	Freq.	%	Freq.	%	Freq.	%
Single, never married	18	20			18	14.8
Couple, no children	16	17.8	9	28.1	25	20.5
Divorced	9	10.0			9	7.4
Nuclear family	32	35.6	18	56.3	50	41.0
Blended family	12	13.3	4	12.5	16	13.1
Other	3	3.3	1	3.1	4	3.3

FIFO profiles: Employees and partners

The most common roster for informants at the time of data collection was two weeks away on site followed by one week at home (2/1). The other roster frequencies are shown in Table 5. As discussed in Chapter 1, the profile of rosters was dependent on those offered by particular employers at the time this study was conducted.

Table 5

Current FIFO Rosters of Employees and Partners

Current Roster	FIFO Employees		Partners		Total	
	Freq	%	Freq	%	Freq	%
9/5 (days)	28	31.1	10	31.3	38	31.1
2/1 (weeks)	34	37.8	12	37.5	46	37.7
3/1 (weeks)	12	13.3	6	18.8	18	14.8
5/2,4/3 (days)	11	12.2	3	9.4	14	11.5
8/6 (days)	4	4.4	1	3.1	5	4.1
7/7 (days)	1	1.1			1	0.8
Total	90	100.0	32	100.0	122	100.0

Satisfaction with current roster cycle: Employees and partners

Employees and partners frequencies and percentages of satisfaction with their current roster cycles are presented in Table 6.

Table 6

Employees and Partners Satisfaction with Current Roster Cycle

	Employees		Partners		Total	
	Freq	%	Freq	%	Freq	%
Not at all satisfied	11	12.2	5	15.6	16	13.1
A little satisfied	13	14.4	4	12.5	17	13.9
Neutral	23	25.6	4	12.5	27	22.1
Satisfied	26	28.9	11	34.4	37	30.3
Very satisfied	17	18.9	8	25.0	25	20.5
Total	90	100.0	32	100.0	122	100.0

Roster preferences: Employees and partners

The informants' most preferred rosters of those available at the time are presented in Table 7. Roster preferences depended on a number of variables such as family situation, job type and requirements, and any trade off between roster and annual leave or pay. The three most favoured by both employees and partners were 8 days away and 6 days home (8/6), 9 days away and 5 days home (9/5) and 2 weeks away and 1 week home (2/1). Some employees travelled to and from the mine in their "break" time while others travelled in "company" time. This, as well as the flying time impacted on the amount of time they had at home, and their roster satisfaction and preference.

Table 7
Preferred Rosters of Employees and Partners

Preferred Roster	FIFO Employees		Partners		Total	
	Freq	%	Freq	%	Freq	%
8/6 (days)	25	28.4	6	19.4	31	26.1
2/1 (weeks)	20	22.7	6	19.4	26	21.8
9/5 (days)	16	18.2	8	25.8	24	20.2
2/2 (weeks)	8	9.1	2	6.5	10	8.4
7/7 (days)	9	10.2	3	9.7	12	10.1
3/1 (weeks)	4	4.5	3	9.7	7	5.9
5/2,4/3 (days)	5	5.6	2	6.2	7	5.9
4/1 (weeks)	1	1.1	1	3.2	2	1.7
Total	88	100.0	31	100.0	119	100.0

Preferred and expected future years FIFO employment: Employees and partners

Employees and partners indicated how long they *wanted* to have FIFO employment and how long they *expected* to have FIFO employment. These are presented in Table 8 and Table 9. More than 25% of both Employees and Partners expected they would be in FIFO employment for an unknown number of years. However, while 31.2% of partners wanted to have FIFO employment for less than 1 year, only 9.4% expected this would happen. Figure 10 presents the comparison between employees and partners wants and expectations for FIFO employment.

Table 8

Preferred Years Future FIFO Employment: Employees and Partners

Wanted Years FIFO	FIFO Employees		Partners		Total	
	Freq	%	Freq	%	Freq	%
<1	16	17.8	10	31.2	26	21.3
1<3	23	25.6	8	25.0	31	25.4
3<5	12	13.3	5	15.6	17	14.0
>5	11	12.2	5	15.6	16	13.1
Unknown	28	31.1	4	12.6	32	26.2
Total	90	100.0	32	100.0	122	100.0

Table 9

Expected Years Future FIFO Employment: Employees and Partners

Expected Years FIFO	FIFO Employees		Partners		Total	
	Freq	%	Freq	%	Freq	%
<1	13	14.4	3	9.4	16	13.1
1<3	25	27.8	10	31.2	35	28.7
3<5	15	16.7	6	18.8	21	17.2
>5	12	13.3	5	15.6	17	13.9
Unknown	25	27.8	8	25.0	33	27.1
Total	90	100.0	32	100.0	122	100.0

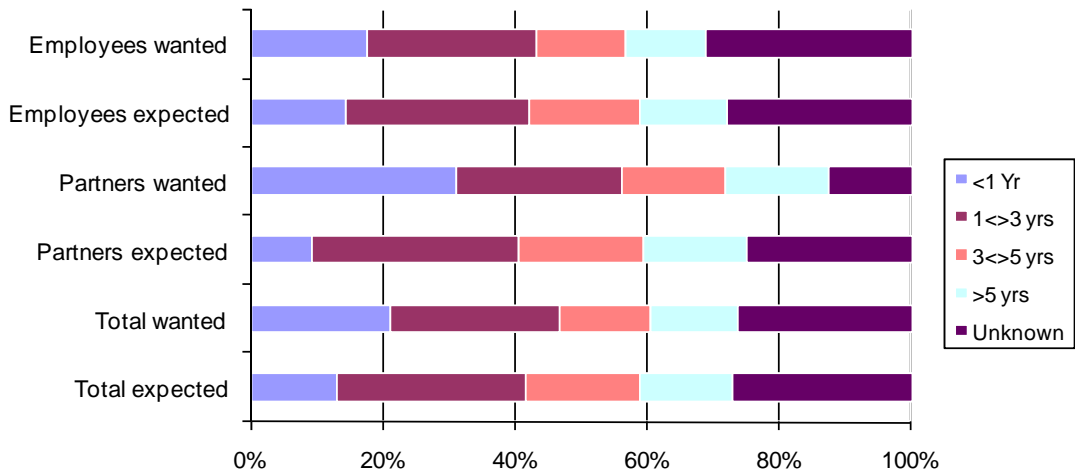


Figure 10. Wanted and Expected Future Years FIFO Employment: Employees and Partners

FIFO and residential

A number of employees (n = 63, 70.8%) and partners (n = 18, 56.3%) had previous experience living and working in one or more Australian mining towns. Their preferences for FIFO or residential living are shown in Table 10. Although they were in FIFO employment at the time the survey was completed, 32.2% of informants stated they preferred a residential lifestyle. Interestingly, 36.7% of partners reported their preference as neither FIFO nor residential employment suggesting they would prefer city based employment while only 15.3% of employees reported a similar preference. This incongruence between the informants’ lived and preferred lifestyles is discussed in Chapter 7.

Table 10

FIFO and Residential Preferences: Employees and Partners

Employment Preference	Employees		Partners		Total	
	Freq	%	Freq	%	Freq	%
FIFO	42	49.4	12	40.0	54	47.0
Residential	30	35.3	7	23.3	37	32.2
Neither	13	15.3	11	36.7	24	20.9
Total	85	100.0	30	100.0	115	100.0

Measures

A number of psychometric instruments and one survey instrument were completed by the informants. The details of these are presented below.

General Health Questionnaire 12 (GHQ-12) (Goldberg & Williams, 1991)

The GHQ-12 is a 12-item self-report inventory which assesses the psychological health and wellbeing of adults. It is designed to be maximally sensitive to changes in normal functioning and to the appearance of new and distressing symptoms. It covers feelings of strain, depression, inability to cope, anxiety based insomnia and lack of confidence, and is based on the respondent's assessment of their present state relative to their usual state. This shorter version of the GHQ has been shown to be as effective as longer versions and has the added advantage of being easier to complete (Goldberg et al., 1997). It is widely used to assess psychological wellbeing in community and occupational samples (e.g., Alford, Malouff, & Osland, 2005; ABS, 1997; Avery, Betts, Whittington, Heron, Wilson, & Reeves, 1998; Banks, Clegg, Jackson, Kemp, Stafford, & Wall, 1980; Goldberg & Williams, 1991; Goynes, 2001; Hardy, Shapiro, Haynes, & Rick, 1999; Lawrie & Pelosi, 1995; McClelland, 1998; Winefield, Gillespie, Stough, Dua, Hapuarachi, & Boyd, 2003; Winefield, Goldney, Winefield, & Tiggemann, 1989). It focuses on mental as opposed to somatic symptoms (van Hemert, Heijer, Vorstenbosch, & Bolk, 1995). Informants are required to tick one of four categories, namely (1), "not at all" or "more than usual"; (2) "no more than usual" or "same as usual"; (3) "rather more than usual" or

“less so than usual”; and (4) “much more than usual” or “less than usual”, for each of the 12 items according to the degree to which they have recently experienced the particular symptom.

The Likert system of scoring the GHQ-12 was used in this study (Goldberg & Williams, 1991). This scoring system provides an indication of the severity of symptoms. Responses were scored with 0, 1, 2 or 3, with 3 being the presence of the symptom “much more than usual”. A global score is produced by summing the item scores with a range from 0 to 36. Higher scores indicated an increased likelihood of psychological distress (Banks et al, 1980; Donath, 2001).

The GHQ-12 has good internal reliability (.89, Hardy et al., 1999; .91, McCabe, Thomas, Brazier, & Coleman, 1996). Test-re-test over 2 weeks was acceptable at .73 (Hardy et al.). Cronbach’s alpha for the current study was .85 (Total sample), .82 (Employees Group) and .88 (Partners Group) indicating an acceptable level of reliability for research purposes (Hammond, 1997; Whitley, 2001). The GHQ-12 has been extensively validated in a number of cultures and languages (Goldberg et al., 1997) and has been widely used with the Australian population (Alford et al., 2005; Goyne, 2001; Muir, 1986), including the 1997 National Survey of Mental Health and Wellbeing conducted by the Australian Bureau of Statistics in which 4705 males and 5936 females across all Australian states and territories completed the GHQ-12 (ABS, 1997). Data from this survey is available across a wide number of categories including urban/rural residence, marital status, labour force status and housing tenure. (See Appendix B for examples of items from the GHQ 12).

Dyadic Adjustment Scale (DAS) (Spanier, 2001).

The DAS is a widely used 32 item self-report measure of relationship satisfaction which was explicitly designed as a measure of relationship adjustment in both married couples and unmarried cohabiting couples. It is also appropriate for use with non-heterosexual couples and can be used by one or both partners and is a widely used instrument to assess dyadic adjustment in Australian community samples (e.g., DeLongis, Capreol, Holtzman, O’Brien, & Campbell, 2004; Lam, Hiscock, & Wake, 2003;

McMahon, Gibson, Leslie, Cohen, & Tennant, 2003; Meegan & Goedereis, 2006; Russell & Russell, 1994; Wilson, Charker, Lizzio, Halford, & Kimlin, 2005).

The DAS consists of four sub-scales. Dyadic Consensus (13 items) measures the frequency of agreement between partners on matters important to the relationship such as money, religion, friends, household tasks and time spent together; Dyadic Cohesion (5 items) assesses the couple's common interests and frequency of shared activities; Affectional Expression (4 items) gauges the areas of affection and sex, and Dyadic Satisfaction (10 items) considers the amount of tension in the relationship including the frequency of quarrels, discussions of separation and negative interactions. The response format for the items varies as follows: for ratings of agreement: a scale from 0 = always disagrees to 5 = always agrees is utilized; similarly for ratings of frequency: a scale from 0 = all the time to 5 = never is used; and for dichotomous ratings: 0 = yes, 1 = no. The DAS produces an overall score of dyadic adjustment (DAS T)(32 items) as well as a score for each of the subscales. Scores on the DAS T range from 0 to 151, with higher scores indicative of more favourable adjustment. Each item is scored on only one subscale. Partners with scores below 98 are classified as discordant. It is written for Year 8 reading level and can be completed by most people in less than 10 minutes.

The DAS has acceptable levels of validity and reliability with reported internal consistency of the total score greater than .90 for both men and women, and 3 week test-retest reliability of .87. Two week test-retest reliability for the sub-scales was Affectional Expression .75, Cohesion .77, Consensus .85, Satisfaction .81 and .87 for the total score (Carey, Spector, Lantinga, & Krauss, 1993). Discriminant validity has been demonstrated by distinguishing between married and divorced couples and concurrent validity by correlating with the Marriage Adjustment Scale. The validity of the total score as a measure of marital adjustment has been demonstrated repeatedly in marital literature (Carey, Spector, Lantinga, & Krauss, 1993; Heyman, Sayers, & Bellack, 1994). Carey et al. reported no significant differences on the total score or any of the subscales when analysed according to gender. Cronbach's alpha for the DAS in the current study for total participants was: Affectional Expression .91, Cohesion .86, Consensus .75, Satisfaction .88 and .95 for the total DAS score; for the employees group was: Affectional Expression .91,

Cohesion .88, Consensus .77, Satisfaction .89 and .95 for the total score. For the partners group Cronbach's Alpha was Affectional Expression .92, Cohesion .84, Consensus .70, Satisfaction .88 and .94 for the total score, indicating an acceptable level of reliability for research purposes (Hammond, 1997; Whitley, 2001). (See Appendix B for examples of items from the sub-scales of the DAS).

Family Assessment Device (FAD) (Epstein, Baldwin & Bishop, 1983).

The FAD is a 60 item self-report questionnaire designed to evaluate families according to the McMaster Model of Family Functioning (Epstein, Baldwin, & Bishop, 1983). Based on systems theory, this model views the family as “an interactional system whose structures, organisation, and transactional patterns determine and shape its members' behaviour” (Byles et al., 1988, p. 98). Assessment by the FAD reflects the manner in which the family system provides the supports necessary for family members to accomplish the necessary individual and group everyday tasks (Dickstein et al., 1998).

The FAD consists of seven sub-scales which measure the following domains of family functioning; Problem Solving (6 items), Communication (9 items), Roles (11 items), Affective Responsiveness (6 items), Affective Involvement (7 items), Behaviour Control (9 items) and General Functioning (12 items). Successful performance on each of these subscales is required for families to function in an effective and healthy manner. Problem Solving measures the family's ability to resolve instrumental and affective issues at a level which maintains effective family functioning. Communication refers to the degree of clear and open instrumental and affective communication within the family. Roles addresses those specific patterns of behaviour such as meeting basic needs and responsibility for household tasks which family members must perform for successful everyday living. Affective Responsiveness assesses the degree to which family members experience and express their feelings to each other, and Affective Involvement describes the degree to which family members are interested in, concerned about and value each other. Behaviour Control refers to the standards and norms that govern family member's behaviour and their emergency procedures. Finally, general Family Function is an overall measure of the family's ability to accomplish everyday tasks across all of the domains

(Byles, Byrne, Boyle, & Offord, 1988). Each item on the FAD is included in only one of the seven sub-scales.

Responses to each item were made on a 4 point rating scale which ranges from “strongly agree” to “strongly disagree”. For each of the sub-scales, the item scores were totalled and then divided by the number of items belonging to the particular sub-scale. Higher scores are indicative of greater family dysfunction. The recommended cut-off scores for unhealthy family functioning on each sub-scale are as follows; Problem Solving, 2.2, Communication, 2.2, Roles 2.3, Affective Responsiveness, 2.2, Affective Involvement, 2.1, Behaviour Control, 1.9 and General Functioning, 2.0 (Miller, Epstein, Bishop, & Keitner, 1985).

The FAD has been validated in both community and clinical samples (Byles et al., 1988; Kabacoff, Miller, Bishop & Epstein, 1990; Sawyer, Sarris & Baghurst, 1988) and with single parent, blended and intact families (Slattery, Smith, Krapf, Buchenauer & Bean, 2001). It has acceptable levels of validity and reliability with reported internal consistency of between .72 and .92, and one week test-retest reliability of between .66 and .76 (Epstein et al., 1983; Halvorsen, 1991; Kabacoff, et al., 1990). One week test-retest reliability for the sub-scales were: Problem Solving .66, Communication .72, Roles .75, Affective Responsiveness .76, Affective Involvement .67, Behaviour Control .73, and General Functioning .71 (Byles et al., 1988). Cronbach’s alpha for the FAD sub-scales in the present study for the total participants were: Problem Solving .75, Communication .83, Roles .76, Affective Responsiveness .84, Affective Involvement .78, Behaviour Control .77, and General Functioning .90. For the Employees group Cronbach’s Alpha scores were: Problem Solving .76, Communication .86, Roles .70, Affective Responsiveness .82, Affective Involvement .76, Behaviour Control .78, and General Functioning .89. Finally, for the Partners group Cronbach’s alpha scores were: Problem Solving .73, Communication .74, Roles .84, Affective Responsiveness .87, Affective Involvement .81, Behaviour Control .78, and General Functioning .92, indicating acceptable levels of reliability for research purposes for all groups (Hammond, 1997; Whitley, 2001). Social desirability does not seem to exert a strong influence on FAD responses with correlations

for the sub-scales and social reliability ranging from -.06 to -.19 (Byles et al., 1988). (See Appendix B for examples of FAD items for each of the sub-scales).

FIFO Lifestyle Survey (FLS)

The FLS is a multi-faceted survey instrument developed by the researcher to assess informants' perceptions of various aspects of their FIFO lifestyle. These items were developed on the basis of earlier research findings (e.g., Sibbel, 2001). They include demographic questions and a number of items investigating current FIFO employment such as information about the FIFO roster, the length of time the informant has been involved in FIFO (see Appendix B for the complete survey). Employees' responses to the eight items relating to FIFO experiences were made on a five point rating scale with responses which ranged from "not enjoyable or rewarding" to "very enjoyable or rewarding", "not at all like I expected" to "very much like I expected", "not satisfied" to "very satisfied", and "no benefit" to "a lot of benefit". Similarly, Partners responded to the 6 item Partners' FIFO experiences items on a five point rating scale with responses which ranged from "not enjoyable or rewarding" to "very enjoyable or rewarding", "not at all like I expected" to "very much like I expected", "not satisfied" to "very satisfied", and "no benefit" to "a lot of benefit" (see Appendix B for the complete survey). Cronbach's alpha for the current study for the FIFO Experiences Scales was .76 (Employees group) and .77 (Partners group), indicating an acceptable level of reliability for research purposes (Hammond, 1997; Whitley, 2001).

Procedure

The Managing Directors of four medium sized Western Australian base metal mining operations located in the Western Australian Goldfields- Esperance region were initially contacted by phone and subsequently agreed to allow potential informants to be approached through their companies. These companies were selected on the basis of previous contact with them through the Western Australian Chamber of Minerals and Energy and the Western Australian branch of the Australasian Institute of Mining and Metallurgy. Each site was solely FIFO and had both principal company and contractor employees. Two were combined open cut and underground operations and two were solely open cut. Following discussion with management from each of the mining companies, two

recruitment techniques were employed to accommodate the particular site management requirements.

All potential informants were provided with an information package containing the information letter and invitation to participate in the study, an informed consent form and a reply-paid, addressed envelope. An invitation to partners of FIFO employees was also included in the package for those employees who were in a long term relationship.

Ethical considerations of voluntary participation, data management and confidentiality as required by the Edith Cowan University Ethics Committee for research involving human informants were addressed in the letters of introduction and the consent form (see Appendix C for a copy of the letters and the consent form).

The recruitment procedure for each of the sites is described below.

Site 1: An information package was placed in each accommodation unit by village catering/cleaning staff. This is a normal form of communication with employees on this site and protects the privacy of the individuals. During this time the researcher spent three days on site addressing small groups of employees at the beginning of their shifts and answering any questions about the proposed study. Reminder posters were put on notice boards in the village and mine work places.

Sites 2, 3 and 4: Staff from the Human Resources Departments informed employees about the study and invited their participation. Those interested employees were able to collect information packages in confidence on site, thus protecting their privacy. Information and reminder posters were also put on notice boards around the sites.

Informants were requested to return the signed consent form to the researcher by a specified date. On receipt of the signed consent form a package containing the survey instruments, an information letter and reply paid envelope was posted to each informant's home address. Informants completed the survey instruments according to the instructions at home and returned them in the replied paid envelope to the researcher.

The GHQ 12 was scored as soon as possible to identify any informants displaying high levels of psychological distress, none of whom were identified. Similarly the DAS was scored as soon as possible to identify any couples displaying distress in their relationship. Contact details for a selection of psychological and relationship counselling

services were provided to those informants whose scores on the DAS were indicative of relationship distress.

Results

A series of parametric and non-parametric analyses with alpha set at .05 were undertaken in order to test the research questions. Non-parametric analyses were chosen to address issues associated with some small cell sizes and some violations of assumptions of normality. Detailed descriptions of data screening processes, decision criteria and the results for each analysis follow.

Data Screening

Prior to analyses demographic data and scores on the GHQ 12, DAS and FAD were examined through SPSS Version 15 for accuracy of data entry, missing values and fit between their distributions and the assumptions of univariate and multivariate analysis. The variables were examined in both grouped and ungrouped conditions. There were no missing values for FIFO Employees or Partners on variables associated with the GHQ12, DAS, FAD, or the FIFO Lifestyle survey. Five univariate outliers were identified. One case from the Employee group scores on the Dyadic Consensus, Affectional Expression and total Dyadic Adjustment of the DAS; one case from the Partner group on Dyadic Cohesion, and one case from the Partner group on the GHQ 12 because of their extreme Z scores (Tabachnick & Fidell, 2001). These cases were retained in the data set. It was reasoned that these cases were from the intended populations because the distribution of variables in the populations had more extreme cases than a normal distribution, that is, there appeared to be a wider scatter of scores in the Employee and Partner groups and therefore these extreme scores were acceptable (Tabachnick & Fidell, 2001).

Tests of normality revealed normality could not be assumed for a number of variables in both grouped and ungrouped conditions. In the ungrouped condition normality could not be assumed for the GHQ 12, Dyadic Consensus, Dyadic Cohesion, Affectional Expression and the total DAS from the DAS, and Problem Solving, Affectional Responsiveness, Affectional Involvement, Behaviour Control and General Functioning from the FAD. In the Employee group condition normality could not be assumed for Dyadic Consensus, Dyadic Cohesion, Affectional Expression and the total DAS from the

DAS, and Problem Solving, Affectional Involvement, Behaviour Control and General Functioning from the FAD. In the Partner group normality could not be assumed for the GHQ 12, Dyadic Cohesion, and Affectional Expression from the DAS, and Problem Solving from the FAD. The implications of the results of these tests of normality are discussed separately for each of the analyses below.

Individual Wellbeing: Employees and Partners: GHQ 12

Research Question 1: What is the level of psychological wellbeing of FIFO employees and their partners?

The psychological wellbeing of Employees and Partners was assessed using the GHQ 12. Mean scores obtained using the Likert scoring method are reported in Table 11.

Table 11

Means and Standard Deviations of FIFO Employee and FIFO Partner Group Responses to GHQ 12

	GHQ 12		
	<i>M</i>	<i>SD</i>	N
Employees	9.76	4.03	88
Partners	11.53	5.12	32
Total	10.23	4.40	120

Note. ^a Maximum score = 36. Higher scores indicative of increased likelihood of psychological distress.

Results indicate that scores for both the Employee and Partner groups are within the healthy functioning range as assessed by the GHQ 12.

Research Question 4: Do FIFO employees and their partners differ in terms of their reported psychological wellbeing as measured by the GHQ 12?

In order to test the research question whether the Employees and Partners groups would have significantly different means on the GHQ 12, an independent samples *t* test was conducted with alpha set at .05. Although tests of normality revealed normality could not be assumed for the scores of the Partners group, the independent samples *t* test is robust to violations of assumptions of normality provided the sample for each group is greater than 30 (Coakes & Steed, 2006). Thus it was deemed acceptable to conduct this

comparison using an independent samples t test. However, a parallel non-parametric test was conducted and revealed identical results with respect to significant differences between the groups. The results show that there were no significant differences between the mean scores of the Employees group and the Partners group, on the GHQ 12, $t(118) = -1.97, p = .05$ (see Appendix D).

Relational Wellbeing: Employees and Partners: DAS

Research Question 2: What are the levels of relationship satisfaction of FIFO employees and their partners as measured by the DAS?

Further analysis was conducted to explore the Employees' and Partners' perceptions of relationship satisfaction as determined by the DAS. Mean scores on each of the sub-scales and the total DAS are reported in

Table 12. All scores were within the healthy functioning range for each of the sub-scales and the total DAS for Employees and Partners.

Table 12

Means and Standard Deviations of FIFO Employee and FIFO Partner Group Responses to the Sub-scales of the DAS

DAS Sub-Scale	Employees n=58		Partners n=32		Total n= 90	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Dyadic Consensus	48.10	8.78	48.66	9.38	48.30	8.95
Dyadic Satisfaction	39.53	6.49	38.81	6.07	39.28	6.32
Affectional Expression	8.76	2.75	9.25	2.48	8.93	2.65
Dyadic Cohesion	15.31	4.85	15.31	5.81	15.31	5.18
DAS T ^a	111.71	20.11	112.03	20.07	111.82	19.98

Note. ^a Maximum score = 151, higher scores are indicative of healthier relationships, scores below 98 classified as discordant. DAS T = Total DAS.

Research Question 4: Do FIFO employees and their partners differ in terms of their reported relationship satisfaction as measured by the DAS?

A series of independent samples t tests with alpha set at .05 was conducted to investigate whether the Employee and Partner groups had significantly different means on

each of the sub-scales and the total DAS. Tests of normality revealed normality could not be assumed for Employee group scores on the sub-scales of Dyadic Consensus, Dyadic Satisfaction, Affectional Expression and the total DAS, and for scores of the partners group on Dyadic Satisfaction and Affectional Expression, however the sample for each group is greater than 30 (Coakes & Steed, 2006). Thus it was deemed acceptable to conduct this comparison using a series of independent samples t tests. A parallel series of non-parametric tests was also conducted and revealed identical results with respect to significant differences between the groups. The results indicate the differences between the two groups were not significant on any of the DAS sub-scales, Dyadic Consensus, $t(88) = -.279, p = .78$, Dyadic Satisfaction, $t(88) = .517, p = .61$, Affectional Expression, $t(88) = -.839, p = .40$, Dyadic Cohesion, $t(88) = -.002, p = .99$, and DAS T, $t(88) = -.073, p = .94$ (see Appendix D). Thus FIFO employees did not significantly differ in their reports of relationship satisfaction as assessed by the FAD.

Family Function: Employees and Partners: FAD

Research Question 3: What are the perceptions of family function of FIFO employees and their partners as measured by the FAD?

Employees and Partners perceptions of family functioning were assessed using the FAD. Mean scores on each of the sub-scales for the FAD are reported in Table 13. The Employee group's mean for Behaviour Control, $M = 1.90$, was equal to the cut off score for healthy family functioning, all other means for both groups on the FAD sub-scales were within the ranges for healthy family functioning (Miller et al., 1985).

Table 13

Means and Standard Deviations of FIFO Employee and FIFO Partner Group Responses to the Sub-scales of the FAD

FAD Sub-scale	Employees n=61		Partners n=30		Total n= 91	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Problem Solving (2.2) ^a	1.97	0.35	2.02	0.34	1.98	0.35
Communication (2.2) ^a	2.06	0.43	2.07	0.36	2.06	0.41
Roles (2.3) ^a	2.18	0.33	2.22	0.45	2.19	0.37
Affective Responsiveness (2.2) ^a	2.06	0.49	1.87	0.59	2.00	2.01
Affective Involvement (2.1) ^a	2.05	0.37	2.05	0.48	2.05	0.41
Behaviour Control (1.9) ^a	1.90	0.36	1.84	0.41	1.88	0.37
General Function (2.0) ^a	1.80	0.40	1.77	0.54	1.79	0.45

Note. ^a = cut-off score for healthy family functioning. Maximum score for each sub-scale = 4. Higher scores are indicative of greater family dysfunction.

Research Question 4: Do FIFO employees and their partners differ in terms of their perceptions of family functioning as assessed by the FAD?

FAD sub-scale comparisons

A further series of independent samples *t* tests with alpha set at .05 was conducted to explore the differences between the Employee and Partner scores on each of the sub-scales and the General Functioning Scale of the FAD. A parallel series of non parametric

tests revealed identical results with respect to significant differences between the groups. The results indicate there were no significant differences on any of the FAD sub scales, Problem Solving, $t(89) = -.704, p = .48$; Communication, $t(89) = -.133, p = .89$; Roles, $t(89) = -.490, p = .62$; Affective Responsiveness, $t(89) = 1.582, p = .12$; Affective Involvement, $t(89) = -.061, p = .95$; Behaviour Control, $t(89) = .683, p = .50$; and General Function, $t(89) = .323, p = .75$ (See Appendix D).

Family Type, Wellbeing and Relationship Satisfaction

Research Question 5: Do the levels of psychological wellbeing and relationship satisfaction of FIFO employees and partners as measured by the GHQ 12 and the DAS differ according to family type?

Psychological wellbeing and family type

Earlier research (e.g., Arnold, 1995; Reynolds, 2004) suggested a link between family type and FIFO experiences. Thus it was deemed appropriate to conduct further analyses to explore the impact of family type on Employee and Partner wellbeing. Employees were classified into the following categories: *single; couples with no children; couples with children*. Family profiles for Partners were classified as: *couples with no children; couples with children*.

Employee wellbeing and family type

A Kruskal-Wallis Chi-square approximation was conducted to determine if there were differences between each of the family types on the GHQ12 scores for Employees. A Kruskal-Wallis Chi-square approximation was deemed appropriate for this analysis as there were small and uneven sample sizes together with violation of the assumptions of normality. The mean ranks and mean GHQ12 scores for each of the family type categories for Employees are shown in Table 14.

Table 14

Family type ranked means and group means for Employee scores on GHQ12

Family Type	n	Mean Rank	Mean Score
Single	17	43.21	10.71
Couple, no children	16	31.78	8.50
Couple, children	43	39.14	9.87

For the Employee group the Kruskal-Wallis Chi-Square approximation, corrected for ties, $\chi^2(2, N = 76) = 2.31, p = .31$, indicated that the GHQ12 scores were not significantly different across the three groups (See Appendix D). Thus, there were no differences between the psychological wellbeing as measured by GHQ12 for Employees according to their family type.

Partner wellbeing and family type

A Mann-Whitney U test was conducted to determine if there were differences between the *couple no children* and *couple with children* family types on the GHQ12 scores for Partners. A Mann-Whitney U test was deemed appropriate for this analysis as there were small and uneven sample sizes together with violation of the assumptions of normality. The descriptive statistics for each group are reported in Table 15.

Table 15

Descriptive statistics for Partner Family types on GHQ12

Family type	n	Median	Mean Score
Couple, no children	8	13.06	10.62
Couple, children	23	17.02	12.00

For the Partners group the Mann-Whitney U test, with correction for ties and z score conversion, was not significant, $z = -1.06, p = .29$, indicating that the GHQ12 scores were not significantly different between the two groups (See Appendix D). Thus, there

were no differences between the psychological wellbeing as measured by GHQ12 for Partners according to their family type.

Relationship satisfaction and family type

A further series of nonparametric tests was undertaken to determine the impact of family type on Employee and Partner relationship satisfaction.

Employee relationship satisfaction and family type

A series of Mann-Whitney U tests were conducted to determine if there were differences between the *couple no children* and *couple with children* family types on the scores of the sub-scales of the DAS for Employees. Mann-Whitney U tests were deemed appropriate for these analyses as there were small and uneven sample sizes together with violation of the assumptions of normality. The descriptive statistics for each group on the DAS sub-scales are reported in Table 16.

Table 16

Descriptive statistics for Employee Family types on DAS Subscales

Family type	n	DAS T	Dyadic	Dyadic	Affectional	Dyadic
		<i>Mean Rank</i>	Consensus	Satisfaction	Expression	Cohesion
		<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>
Couple, no children	14	34.54	34.00	34.14	31.25	34.25
Couple, children	42	26.49	26.67	26.62	27.58	26.58

Note. DAS T = Total DAS.

For the Employee group the Mann-Whitney U tests, with correction for ties and z score conversion, were not significant, DAS T $z = -1.60$, $p = .11$, Dyadic Consensus $z = -1.46$, $p = .14$, Dyadic Satisfaction $z = -1.50$, $p = .13$, Affectional Expression $z = -1.11$, $p = .46$, Dyadic Cohesion $z = -1.53$, $p = .13$, indicating that the scores on each of the DAS sub-scales were not significantly different between the two groups (See Appendix D).

Thus, there were no differences on the various aspects of relationship wellbeing as measured by the DAS for Employees according to their family type.

Partner relationship satisfaction and family type

A series of Mann-Whitney U tests were conducted to determine if there were differences between the *couple no children* and *couple with children* family types on the scores of the sub-scales of the DAS for Partners. Mann-Whitney U tests were deemed appropriate for these analyses as there were small and uneven sample sizes together with violation of the assumptions of normality. The descriptive statistics for each group on the DAS sub-scales are reported in Table 17.

Table 17

Descriptive statistics for Partner Family types on DAS Subscales

		Dyadic	Dyadic	Affectional	Dyadic	
		DAS T	Consensus	Satisfaction	Expression	Cohesion
		<i>Mean Rank</i>	<i>Mean Rank</i>	<i>Mean Rank</i>	<i>Mean Rank</i>	<i>Mean Rank</i>
Family type	n	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>
Couple, no children	8	19.94	20.13	18.06	20.25	17.81
Couple, children	23	14.63	14.57	15.28	14.25	15.37

Note. DAS T = Total DAS.

For the Partners group the Mann-Whitney U tests, with correction for ties and z score conversion, were not significant, DAS T $z = -1.42, p = .15$, Dyadic Consensus $z = -1.49, p = .14$, Dyadic Satisfaction $z = -.75, p = .45$, Affectional Expression $z = -1.56, p = .12$, Dyadic Cohesion $z = -.66, p = .51$, indicating that the scores on each of the DAS sub-scales were not significantly different between the two groups (See Appendix D). Thus, there were no differences on the various aspects of relationship wellbeing as measured by the DAS for Partners according to their family type.

Impact of Roster on Psychological Wellbeing, Relationship Satisfaction and Family Function

Research Question 6: Do the levels psychological wellbeing, relationship satisfaction and perceptions of family function of FIFO employees and partners as measured by the GHQ 12, the DAS and the FAD differ according to profile of absence (i.e., the roster)?

A series of nonparametric tests was undertaken to determine the impact of roster cycle on the individual wellbeing, relationship satisfaction and perceptions of family function of Employees and Partners. Previous studies (e.g., Arnold, 1995; Gent, 2004; Storey et al., 1989; have indicated an association between length of roster and individual or relationship wellbeing). Employee current roster cycles were classified into the following three categories according to the time away; 6 or fewer days away (including rosters 5/2, 4/3 days), from 7 to 13 days away (rosters 7/7, 8/6, 9/5 days), 14 or more days away (rosters 2/1, 3/1 weeks).

Employee psychological wellbeing and roster

A Kruskal-Wallis Chi-square approximation was conducted to determine the impact of time away on Employee psychological wellbeing as measured by the GHQ 12. Employee Mean Ranks and Mean Scores on the GHQ12 are shown in Table 18. The Kruskal-Wallis Chi-square approximation was appropriate for this analysis as there were small and uneven sample sizes together with violation of the assumptions of normality.

Table 18

Grouped roster ranked means and group means for Employee scores on GHQ12

Grouped Roster	n	Mean Rank	Mean Score
Away < 6 days	11	43.09	9.91
Away 7 to 13 days	32	40.73	9.22
Away 14 days or more	45	47.53	10.11

For the Employee group, the Kruskal-Wallis Chi-Square approximation, corrected for ties, $\chi^2(2, N = 88) = 1.37, p = .50$, indicated that the GHQ12 scores were not

significantly different across the three groups (See Appendix D). Thus, there were no differences for the psychological wellbeing as measured by GHQ12 for Employees according to their time away.

Partner psychological wellbeing and roster

A Kruskal-Wallis Chi-square approximation was conducted to determine the impact of time away on Partner wellbeing. Partners Mean Ranks and Mean Scores on the GHQ12 are shown in Table 19. The Kruskal-Wallis Chi-square approximation was appropriate for this analysis as there were small and uneven sample sizes together with violation of the assumptions of normality.

Table 19

Grouped roster ranked means and group means for Partner on GHQ12

Grouped Roster	n	Mean Rank	Mean Score
Away < 6 days	3	10.33	8.00
Away 7 to 13 days	11	14.59	10.00
Away 14 days or more	18	18.69	13.06

For the Partners group the Kruskal-Wallis Chi-Square approximation, corrected for ties, $\chi^2(2, N = 32) = 2.76, p = .25$, indicated that the GHQ12 scores were not significantly different across the three groups (See Appendix X). Thus, there were no differences for the psychological wellbeing as measured by the GHQ12 for Partners according to the FIFO employees' time away.

Employee relationship satisfaction and roster

A series of Kruskal-Wallis Chi-square approximations were conducted to determine the impact of time away on Employees relationship satisfaction as measured by the DAS. Employees Mean Ranks and Mean Scores on all sub-scales of the DAS are shown in Table 20. The Kruskal-Wallis Chi-square approximations were appropriate for this analysis as there were small and uneven sample sizes together with violation of the assumptions of normality.

Table 20

Grouped roster ranked means and group means for Employee scores on DAS

		DAS T	Dyadic Consensus	Dyadic Satisfaction	Affectional Expression	Dyadic Cohesion
Grouped		Mean Rank	Mean Rank	Mean Rank	Mean Rank	Mean Rank
Roster	n	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>
Away < 6 days	9	27.39 109.89	27.94 47.89	28.78 39.44	24.94 7.89	26.72 14.67
Away 7 to 13 days	18	25.94 108.28	28.00 47.28	25.92 38.67	23.47 8.11	25.39 14.22
Away 14 days or more	31	32.18 114.23	30.82 48.65	31.79 40.06	34.32 9.39	32.69 16.13

Note. DAS T = Total DAS.

For the Employee group the Kruskal-Wallis Chi-Square approximations, corrected for ties, DAS T $\chi^2(2, N = 58) = 1.72, p = .42$, Dyadic Consensus $\chi^2(2, N = 58) = .41, p = .81$, Dyadic Satisfaction $\chi^2(2, N = 58) = 1.40, p = .50$, Affectional Expression $\chi^2(2, N = 58) = 5.60, p = .06$, Dyadic Cohesion $\chi^2(2, N = 58) = 2.43, p = .30$ indicated that the Employee scores on each of the sub-scales of the DAS were not significantly different across the three groups (See Appendix D). Thus, there were no differences between relationship satisfaction as measured by the DAS for Employees according to time away.

Partner relationship satisfaction and roster

A series of Kruskal-Wallis Chi-square approximations were conducted to determine the impact of time away on Partners relationship satisfaction as measured by the DAS. Partners Mean Ranks and Mean Scores on all sub-scales of the DAS are shown in Table 21. The Kruskal-Wallis Chi-square approximations were appropriate for this analysis as there were small and uneven sample sizes together with violation of the assumptions of normality.

Table 21

Grouped roster ranked means and group means for Partner scores on DAS

Grouped Roster	n	DAS T	Dyadic Consensus	Dyadic Satisfaction	Affectional Expression	Dyadic Cohesion
		Mean Rank	Mean Rank	Mean Rank	Mean Rank	Mean Rank
		<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>
Away < 6 days	3	17.50	16.67	17.50	16.67	15.33
Away 7 to 13 days	11	112.67	49.00	39.67	9.33	14.67
Away 14 days or more	18	16.00	15.41	16.00	14.73	13.82
		109.45	47.64	38.82	8.73	14.27
		16.64	17.31	16.64	17.56	18.33
		113.50	49.22	38.67	9.56	16.06

Note. DAS T = Total DAS.

For the Partner group the Kruskal-Wallis Chi-Square approximations, corrected for ties, DAS T $\chi^2(2, N = 32) = .48, p = .79$, Dyadic Consensus $\chi^2(2, N = 32) = .31, p = .86$, Dyadic Satisfaction $\chi^2(2, N = 32) = .07, p = .97$, Affectional Expression $\chi^2(2, N = 32) = .65, p = .72$, Dyadic Cohesion $\chi^2(2, N = 32) = 1.64, p = .44$ indicated that Partner scores on each of the sub-scales of the DAS were not significantly different across the three groups (See Appendix D). Thus, there were no differences on relationship satisfaction as measured by the DAS for Partners according to FIFO employee time away.

Employee family function and roster

A series of Kruskal-Wallis Chi-square approximations were conducted to determine the impact of time away on Employees perceptions of family function as measured by the FAD. Employees Mean Scores on all sub-scales of the FAD are shown in Table 22. The Away 7 to 13 days group was just above the cut-off scores for healthy functioning for the Affective Involvement and Behaviour Control sub-scales. The Away more than 13 days group was also just above the healthy functioning cut-off score for Behaviour Control.

Table 22

Means and Mean Ranks of FIFO Employee Roster Group Responses to the Sub-scales of the FAD

FAD Sub-scale	Away < 6 days n=9		Away 7 to 13 days n=18		Away 14 days or more n= 34	
	<i>M</i>	<i>MRnk</i>	<i>M</i>	<i>MRnk</i>	<i>M</i>	<i>MRnk</i>
Problem Solving (2.2) ^a	2.04	35.17	1.99	32.28	1.94	29.22
Communication (2.2) ^a	1.94	26.39	2.11	33.11	2.07	31.10
Roles (2.3) ^a	2.07	23.78	2.18	30.08	2.21	33.40
Affective Responsiveness (2.2) ^a	2.02	27.33	2.03	29.67	2.08	32.68
Affective Involvement (2.1) ^a	1.95	27.28	2.14*	34.94	2.02	29.90
Behaviour Control (1.9) ^a	1.73	23.50	1.97*	33.64	1.91*	31.59
General Function (2.0) ^a	1.67	25.94	1.79	30.28	1.85	32.72

Note. ^a = cut-off score for healthy family functioning. Maximum score for each sub-scale = 4. Higher scores are indicative of greater family dysfunction. * = equal to or above the cut-off score for healthy functioning

The Kruskal-Wallis Chi-square approximations were appropriate for this analysis as there were small and uneven sample sizes together with violation of the assumptions of normality. For the Employee group the Kruskal-Wallis Chi-Square approximations, corrected for ties [problem solving $\chi^2(2, N = 61) = .96, p = .62$, communication $\chi^2(2, N =$

61) = .87, $p = .65$, roles $\chi^2 (2, N = 61) = 2.18, p = .34$, affective response $\chi^2 (2, N = 61) = .80, p = .67$, affective involvement $\chi^2 (2, N = 61) = 1.48, p = .48$, behaviour control $\chi^2 (2, N = 61) = 2.08, p = .35$, general family function $\chi^2 (2, N = 61) = 1.09, p = .58$] indicated that Employee scores on each of the sub-scales of the FAD were not significantly different across the three groups (See Appendix D). Thus, there were no differences on perceptions of family function as measured by the FAD for Employees according to FIFO employee time away.

Partner family function and roster

A series of Kruskal-Wallis Chi-square approximations were conducted to determine the impact of time away on Partners perceptions of family function as measured by the FAD. Partners Mean Scores on all sub-scales of the FAD are shown in Table 23. The Away less than 6 days group was just above the cut off score for healthy functioning for Affective Involvement and the Away 7 to 13 days group was on the cut off score for healthy Behaviour Control.

Table 23

Means and mean Ranks of Partner Group Responses to the Sub-scales of the FAD according to FIFO employees' days away

FAD Sub-scale	Away < 6 days n=3		Away 7 to 13 days n= 10		Away 14 days or more n=17	
	<i>M</i>	<i>MRnk</i>	<i>M</i>	<i>MRnk</i>	<i>M</i>	<i>MRnk</i>
Problem Solving (2.2) ^a	2.05	15.50	2.08	17.15	1.98	14.53
Communication (2.2) ^a	2.18	18.67	2.06	15.50	2.06	14.94
Roles (2.3) ^a	2.15	15.67	2.26	16.05	2.21	15.15
Affective Responsiveness (2.2) ^a	1.94	17.00	1.93	17.05	1.82	14.32
Affective Involvement (2.1) ^a	2.24*	19.50	2.01	15.10	2.04	15.03
Behaviour Control (1.9) ^a	1.78	12.33	1.91*	17.25	1.82	15.03
General Function (2.0) ^a	1.72	16.17	1.67	14.20	1.84	16.15

Note.^a = cut-off score for healthy family functioning. Maximum score for each sub-scale = 4. Higher scores are indicative of greater family dysfunction. * = equal to or above the cut-off score for healthy functioning

The Kruskal-Wallis Chi-square approximations were appropriate for this analysis as there were small and uneven sample sizes together with violation of the assumptions of normality. For the Partner group the Kruskal-Wallis Chi-Square approximations, corrected for ties [problem solving $\chi^2(2, N = 30) = .74, p = .59$, communication $\chi^2(2, N = 30) = .46, p = .79$, roles $\chi^2(2, N = 30) = .07, p = .97$, affective response $\chi^2(2, N = 30) = .71, p = .70$,

affective involvement $\chi^2 (2, N = 30) = .70, p = .71$, behaviour control $\chi^2 (2, N = 30) = .84, p = .66$, general family function $\chi^2 (2, N = 61) = .33, p = .85$] indicated that Partner scores on each of the sub-scales of the FAD were not significantly different across the three groups (See Appendix D). Thus, there were no differences on perceptions of family function as measured by the FAD for Partners according to FIFO employee time away.

Discussion

This quantitative phase investigated the psychological wellbeing, relationship satisfaction and perceptions of family function of FIFO Employees and Partners of FIFO employees according to group, family type and roster. In particular it sought to answer the following research questions: what are the levels of psychological wellbeing of FIFO employees and the partners of FIFO employees; what are the levels of relationship satisfaction of FIFO employees and their partners; what are the levels of family function as perceived by FIFO employees and the partners of FIFO employees; whether FIFO employees and their partners differ in terms of their psychological wellbeing; whether FIFO employees and their partners differ in their perceptions of family function; whether family type impacts on FIFO employees and partners reports of psychological wellbeing and relationship satisfaction; whether roster arrangements impact on FIFO employees and partners reports of psychological wellbeing and relationship satisfaction and family function. This section discusses the results of the analyses in relation to the above research questions and findings from earlier research as presented in Chapters 2 and 3.

FIFO Employee and Partner Psychological Wellbeing, Relationship Satisfaction and Perceptions of Family Function.

The results revealed that both groups, namely the FIFO Employees and Partners of FIFO employees, were within the norms for healthy functioning on the scales and sub-scales of the measures of psychological wellbeing, relationship satisfaction and perceptions of family function. Furthermore, there were no statistically significant differences between the scores of the two groups on any of these measures. The results for each of the measures are now discussed individually.

Psychological wellbeing

Earlier FIFO research was premised on the assumption that stress associated with regular employment related absence could impact negatively on FIFO Employee and Partner psychological wellbeing (Arnold, 1995). The current findings however, suggest that for this sample, both groups' levels of psychological wellbeing are similar to those of the general population.

The findings for this group of FIFO Employees are in keeping with those of Keown (2005) who found no significant differences in levels of psychological well-being as determined by the GHQ 12 between male FIFO and residential mining employees in the Goldfields region of Western Australia.

Further investigation revealed that although there were no statistically significant differences between the psychological wellbeing of the Partner and Employee groups, the Partners did report higher levels of psychological distress. Previous studies (e.g., Reynolds, 2004; Taylor, 2006) found that while partners of FIFO employees were generally satisfied with the lifestyle, there was a suggestion FIFO presented more challenges for the partners at home which might impact on their wellbeing. These challenges for Partners included continual adjustment in the household to the on-going comings and goings (Clark & Taylor, 1988; Watts, 2004) and the division of household labour and childcare, particularly having sole responsibility for the household while the FIFO employee was absent (Pollard, 1990). Others (e.g., Reynolds, 2004; Taylor, 2006; Watts, 2004) however, found that these challenges could have positive outcomes for the Partners such as increased independence and resourcefulness that allowed them to successfully manage the stressors associated with the lifestyle.

Relationship satisfaction

The results indicate that there were no statistically significant differences between the Employee and Partner groups' reports of the various aspects of their relationship satisfaction and adjustment, and that both groups were within the norms for healthy functioning on each of the sub-scales. Thus, their reported frequency of agreement on matters important to the relationship such as money, religion, friends, household tasks and time spent together was similar to that of the wider Australian population, as was their

satisfaction with the number of common interests they had and the frequency of shared activities, their expression of affection and sexual relationships. Satisfaction in terms of the amount of tension in the relationship including the frequency of quarrels, discussions of separation and negative interactions was also within the range for healthy functioning. These findings are consistent with those of Taylor (2004) who found FIFO employees and partners of FIFO employees reported very good communication and high levels of cohesion and flexibility in their relationships. However, Gent (2004) found that married and cohabiting FIFO employees reported significantly lower (less healthy) scores in comparison with the established norms on the Dyadic Adjustment Scale (Spanier, 1989) sub-scales of Dyadic Consensus, Satisfaction and the overall DAS. Furthermore, there were no significant differences between the norms and these employees on the measure of relationship cohesion, but they did score significantly higher than the norms on the measure of affectional expression. Gent partially explained these mixed results in terms of the length of time away (roster cycle), proposing that a longer time away would place more strain on dyadic relationships. Two thirds of the FIFO employees in Gent's study were away two or more weeks of each roster cycle, and 50% of these were away for more than three weeks at a time.

Perceptions of family function

The results revealed no statistically significant differences between the FIFO Employees and Partners on any of the FAD subscales. Further, scores on each of the FAD sub scales were within the healthy range for both groups, although the Employee group score for Behaviour Control was on the cut off for healthy functioning. Partners reported healthier scores for Problem Solving, Communication and Roles. Thus this sample of FIFO Employees and Partners perceived their families as generally functioning well.

These findings extend and partially support the findings of Sibbel (2001) and Kaczmarek and Sibbel (2008). In Sibbel's study, partners of FIFO employees reported scores outside the cut-off for healthy function in the areas of Roles and Affective Involvement. Furthermore, although still within the healthy range, there were significant differences between FIFO partner and the Control partner scores on the subscales of Communication, Affective Response, Behaviour Control and General Functioning. Each of

the participants in Sibbel's 2001 study had primary school aged children whereas there was a greater range in the present sample including partners from across the life cycle.

Family type and psychological wellbeing and relationship satisfaction

Earlier studies (e.g., Gent, 2004; Reynolds, 2004; Storey & Shrimpton, 1989; Storey, Shrimpton, Lewis & Clark, 1989) reported differences in the effects of FIFO employment according to the family type of the Employee. Thus the impacts of FIFO employment on wellbeing could vary depending on whether Employees were single, in a relationship with no children or in a relationship with children. The results of the current study however, revealed no significant differences between Employee and Partner psychological wellbeing and relationship satisfaction according to family type. Although the issues and impacts associated with FIFO employment are different for each family type¹³, all groups seem able to generally adapt to and cope with the lifestyle. Thus, it could be that the degree of stress associated with the FIFO lifestyle does not differ between family types, rather it is the type of stressors that varies between groups.

Roster and psychological wellbeing, relationship satisfaction and family functioning

Profile of absence (i.e., roster) was shown by earlier studies (e.g., Beach, 1999; Gent, 2004; Kaczmarek & Sibbel, 2008; Reynolds, 2004; Storey & Shrimpton, 1989; Storey, Shrimpton, Lewis & Clark, 1989; Watts, 2004) to impact on individual and family experiences of FIFO employment. The results of the current study however revealed no significant differences between Employee and Partner psychological wellbeing, relationship satisfaction and perceptions of family function according to profile of absence (i.e., *away < 6 days; away 7 to 13 days; away > 14 days or greater*). Each of the profiles of absence for the Employees reported healthy levels of functioning on the subscales of the FAD except for the *away 7 to 13 days* group which was just above the cut off score for healthy functioning on the Behaviour Control and Affective Involvement sub-scales, and the *away > 14 days or greater* for Behaviour Control. Similarly all absence profiles for partners reported healthy functioning on the sub-scales of the FAD except for the *away < 6 days* which was just above the healthy functioning cut off for Affective Involvement, and

¹³ These issues are discussed in detail in Chapter 7

the *away 7 to 13 days* group which was just above the cut-off for healthy functioning on Behaviour Control.

The differences between these current findings and those of earlier studies could be accounted for by differences in the profiles of absence included in each of the studies. For example, Beach (1999) examined the impacts of a four weeks away/one week home roster, concluding that the ongoing cycles of lengthy separations and relatively brief periods at home altered the family structure and made it unstable. Families in this study believed that shorter roster cycles would enable them to function better as a unit and thus better adapt to the FIFO lifestyle. Similarly, others (e.g., Gent, 2004; Kaczmarek & Sibbel, 2008; Storey & Shrimpton, 1989; Storey, Shrimpton, Lewis & Clark, 1989) reported those with longer rosters (e.g., nine weeks away and three weeks home, compared with seven or fourteen days away and seven days home) generally had more difficulty and were less satisfied with the FIFO lifestyle. In the current study, the longest absence was three weeks away followed by one week home, and this roster was experienced by a minority (14.8%) of participants. The greater number had 14 or fewer days of absence in any one roster cycle. Moreover, the majority expressed satisfaction with their roster cycles. Thus participants in the current study had shorter roster cycles with which they were generally satisfied, which in turn could positively contribute to their generally healthy levels of psychological wellbeing, relationship satisfaction and family functioning.

The slightly elevated scores on Behaviour Control and Affective Involvement recorded by two of the Partner and two of the Employee roster groups reflect findings from earlier research. For example, Sibbel, (2001) found partners of FIFO employees perceived less healthy levels of family function on five of the seven FAD sub-scales including Affective Involvement and Behaviour Control than did the community control group. Affective involvement refers to the amount of interest, care and concern family members invest in each other and the readiness of families to help and support each other. For all FIFO employees the regular absences impose physical limitations on their ability to provide the particular type of help and support described by affective involvement. On the other hand, for those on a *away < 6 days* roster, although the FIFO employees are home more often, their partners might perceive the two or three days at home usual to this type of

roster allow little time for the couple to properly reconnect and for the expected support to be given, especially when time is needed to recover from work-related fatigue (Gallegos, 2006). Behaviour Control is the family's style of maintaining discipline and standards of behaviour. The perceptions of problems associated with this area recorded by both of the Employee groups on the longer profiles of absence (i.e., *away 7 to 13 days*; *away > 14 days or greater*) and the *away 7 to 13 days* Partner group could reflect issues associated with continually changing role definitions within the family such as inconsistencies in expectations of family members (Gallegos, 2006; Sibbel, 2001). Those families on the shorter rosters may not perceive the same intensity of role changes as those on the longer rosters. Both of these areas warrant further research to better understand the impacts of profile of absence on both FIFO employees' and their partners' perceptions of how their families are functioning.

Conclusion

In conclusion, the results from the quantitative phase provided evidence that both the FIFO Employees and the Partners of FIFO employees were within the norms for healthy functioning on the scales and sub-scales of the measures of psychological wellbeing, relationship satisfaction and perceptions of family function, and that there were no statistically significant differences between the scores of the two groups on any of these measures. Furthermore, there were no significant differences when the groups according to family type or profile of absence. Thus, despite perceptions that regular FIFO employment related absence would have adverse impacts on various aspects of wellbeing, this group of FIFO employees and partners reported similar levels of psychological wellbeing, relationship satisfaction and perceptions of family function to the general population.

In keeping with the research design as detailed in Chapter 4, further explication and discussion of these findings will be presented in Chapters 7 and 8 in conjunction with the results of the qualitative phase of the study.

Chapter 6

Qualitative Phase

Chapter 6 describes the research process for the qualitative phase of the project. First, the aims of the study and the associated research questions are stated followed by descriptions of the methodological perspectives of constructivist grounded theory and the study design. Data in the form of semi-structured interviews were collected from FIFO mining employees and the partners of FIFO mining employees. The demographic details of these informants are provided, and the interview method and analysis processes are explained. Details of the data collection procedures, ethical considerations and research rigor are then presented.

Chapter 6

Qualitative Phase

Introduction and Research Questions

The previous chapter presented the detail of the quantitative phase methodology and findings. This chapter provides the details of the qualitative phase methodology and method. The qualitative phase sought to explore the experiences of FIFO employees and partners of FIFO employees in order to develop an understanding and theoretical scheme of the role of contextual factors in supporting FIFO employees and partners in coping with and adapting to the lifestyle, and thus impacting on their individual, relational and family well being.

The specific research questions were as follows:

1. What are the experiences of fly-in/fly-out employees and their partners?
2. What factors influence the wellbeing of FIFO employees and their partners?
3. How do these factors influence the wellbeing of FIFO employees and their partners?
4. What are the implications at the legislative, company, community and family levels in supporting FIFO employees and their partners?

Research Design

Constructivist grounded theory analysis techniques as described by Charmaz (2000, 2006) were employed in this study. As discussed below, this approach was deemed appropriate because of the exploratory and applied nature of the aims of the study (Charmaz, 2000, 2003; Creswell, 2005; Strauss, 1997; Strauss & Corbin, 1998). This study was justified and informed by the earlier review of the FIFO literature (Chapter 2) which revealed research to date only partially explained the impacts of the FIFO lifestyle on employees and their families in the Western Australian context.

This grounded theory project began with acknowledgement of my previous research, work and personal experience of fly-in/fly-out employment practices that resulted in the set of general concepts that shaped this research project. This is in keeping with Blumer's (1984) notion of sensitizing concepts which provide initial guiding research ideas. Both the literature and personal experience brought concepts to the qualitative

analysis which were confirmed, modified, combined or discarded during the process (Morse, 1994).

Grounded Theory

Grounded theory is a widely employed qualitative research method used to develop a theory about a substantive topic (Creswell, 2005). It uses systematic data collection and analysis procedures to induce theory from the data, and is commonly used in, for example, education, nursing, business and psychological research and applied settings (Creswell, 2003; Charmaz, 2000; Strauss & Corbin, 1994). The emergent theory has relevance for both research and practical applications (Strauss & Corbin, 1998).

Originally developed by Glaser and Strauss (1967), grounded theory has its roots in sociology, with theoretical underpinnings of symbolic interactionism (Eaves; 2001; Fassinger, 2005). This sociological approach which is informed by pragmatism and based on the works of Dewey and Mead, proposes that people are active agents who construct their realities through social interactions in which they use shared symbols such as language, clothing and gestures to communicate meaning. These interactions are inherently dynamic and interpretive, that is, people think about their actions rather than merely responding mechanically to stimuli (Morse & Field, 1995). Grounded theory aims to discover the social-psychological processes that are used by people to create meaning in specific settings (Cutcliffe, 2000; Kearney, 1998). It incorporates "systematic inductive guidelines for gathering, synthesizing, analysing and conceptualising qualitative data to construct theory" about the particular phenomenon (Charmaz, 2003, p. 82). The resultant theory should be conceptually dense, useful, relevant and explanatory (Glaser & Strauss, 1967).

A number of different approaches to grounded theory methodology have emerged in response to Glaser and Strauss's (1967) original statement of method which invited flexibility in the application of their framework depending on the particular research setting (see Charmaz, 2000, 2006 for a more detailed discussion). In essence, Glaser's approach has remained consistent with the original method, emphasising the emergence of the theory solely from the data (Glaser, 1978, 2002), while Strauss and others (e.g., Charmaz, 2000, 2006; Strauss & Corbin, 1990, 1998) have developed more constructivist

approaches acknowledging the role of the researcher as co-creator of the theory (Strauss & Corbin, 1998) and thus presuming processes of both induction and deduction (Charmaz, 2000).

In particular, Charmaz' (1990, 2000, 2006) constructivist approach to grounded theory acknowledges that human reality is socially constructed, is contextual and thus changeable and influenced by both the speaker and the listener. It recognises the impacts of the values, experiences and priorities the researcher brings to the process, and decisions they make about the categories during the process, thus positioning the researcher as co-creator in the development of the theory. This approach is consistent with the values of community psychology and is therefore an appropriate method of data collection and analysis for community psychology research. Charmaz' approach allows the use of grounded research procedures with diverse methodological assumptions provided researchers acknowledge the values and assumptions they bring to their research (Charmaz, 2000).

Grounded theory focuses on complex psychological and social phenomena in non-manipulated settings and is therefore suitable for this exploration of the experiences of FIFO employees and development of practical applications such as recommendations for policy and the provision of support for FIFO employees and their partners.

Key Informants

The informants in the present study were selected using initial criterion sampling techniques (Charmaz, 2000; Creswell, 2005; Fassinger, 2005; Glaser, 1978) from those FIFO employees and their partners who participated in the quantitative phase and who indicated their willingness to participate in the qualitative phase. Consistent with grounded theory, further purposeful sampling was employed in an attempt to achieve maximum variability and richness of data thus enabling a deeper understanding of the FIFO experience (Charmaz, 2006; Morse, 1994; Patton 2002). Informants were purposively sampled across three stages of the lifecycle, namely single, couples with no children and couples with children at home. Finally, the sample was refined and expanded according to the emergent data using theoretical sampling techniques (Charmaz, 2006; Fassinger, 2005; Strauss & Corbin, 1990). This ensured the informants represented the diversity of FIFO

employees and partners in Western Australia including diverse ages and lifecycle stages, both sexes, both contractor and principal employee personnel as well as a range of employment types.

A medium-sized sample of 16 FIFO employees and 12 partners of FIFO employees was included in the study thus allowing in-depth understandings and representing diverse perspectives (Glaser & Strauss, 1967; Lincoln & Guba, 1985; Patton, 2002). The demographic profile of the final sample is presented in Appendix E. FIFO employees ranged in age from 23 to 56 years ($M = 35.22$; $SD = 8.50$) and partners from 21 to 53 years ($M = 33.57$; $SD = 9.56$). Their time in FIFO employment ranged from 6 months to 16 years ($M = 7.42$; $SD = 4.66$). Some had worked FIFO for a number of years, lived residential for a time and then returned to FIFO. Two of the partners, one male and one female, had also worked as FIFO employees before they had children. There were 13 male and four female employees, one male and ten female partners. All but three informants were in long-term relationships at the time of interview. The FIFO employees included both underground and surface employees, contractor and principal company personnel, and their occupations included geologists, mining engineers, plant operators, drillers, jumbo operators, machinery operators, supervisors, and human resources and safety personnel. Seven partners of FIFO personnel had full-time or part-time employment, three were students at university and three were engaged in full-time home duties. All informants lived in the Perth metropolitan regional area. The FIFO employees worked at one of the four medium sized Western Australian metalliferous mines described in the quantitative section of the study. Further residential and employment information is not included in order to protect the informants' identities (Morse, 1994).

Materials

Interviews are a common method of data collection in qualitative research and grounded theory in particular, allowing each informant to share his or her unique experience of and perspectives on a particular phenomena, and as such were used in this study (Charmaz, 2005, Creswell, 2005). A semi-structured interview approach using recursive techniques was employed to provide some consistency across the topic while at the same time allowing questions and probes to be generated by the researcher in response

to the particular topics and themes that emerged during any specific interview, thus capturing detailed descriptions of individual experiences (Burgess-Limerick & Burgess-Limerick, 1998; Fassinger, 2005; Smith, 1995). Recursive interviewing is a conversational approach in which the interviewer guides the interview in response to the information from the informant rather than following a set list of questions. The interview is a co-construction between the interviewer and the informant (Minichiello, Aroni, Timewell & Alexander, 1995).

An interview guide of open-ended questions was developed to facilitate the interview process and allow informants to answer in their own words (Patton, 2002) (see Appendix E). These questions were derived from themes that arose during earlier FIFO research as reviewed in Chapter 2 as well as from personal experience. A number of different question types were included in the guide to access different types of information and to explore particular issues in greater depth and detail (Minichiello et al., 1995). These included some demographic questions (e.g., “How long have you been doing fly-in/fly-out?”), and descriptive questions (e.g., “Tell me about . . . “), while others explored feelings (e.g., “How did that make you feel?”), knowledge (e.g., “What do you know about the company’s EAP scheme?”) and opinions (e.g., “How does the roster impact on your social life?”). Probes such as “Can you tell me more about that?” or “and then what happened” were also used to clarify or expand particular details. These questions were meant as a guide and as such their order or specific wording during any interview was not predetermined but rather depended on the particular circumstances that evolved (Strauss & Corbin, 1990). Each interview concluded with statements and questions such as “I have no more questions, is there anything else you would like to add? Do you have any questions you would like to ask me? Thank you very much for taking the time to talk to me today, I really appreciate it. Please contact me if you think of anything else you would like to add.” This ensured each informant had the opportunity to share any further experiences (Patton, 2002).

To assess the appropriateness of the content and the language, the interview guide was trialled with a FIFO employee and a FIFO employee’s partner, both of whom were

acquaintances and who had not previously participated in a study of this nature (Fassinger, 2005; Smith, 2003). No resultant changes were deemed necessary.

Ethical Considerations

The Edith Cowan University Ethics Committee requirements of voluntary participation, data management and confidentiality for research involving human informants were clearly addressed in the letters of introduction and the consent form (see Appendix C for a copy of the letters and the consent form). Further ethical considerations were described in Chapter 4.

Procedure

Each informant was contacted by phone and a suitable time and quiet place of their choice was arranged for the interview. Couples were interviewed separately to encourage maximum disclosure (Smith, 1995). The majority of interviews were held at the informants' homes, one was held in an office at Edith Cowan University, and three at public facilities. Two phone interviews were conducted. Telephone interviews have been found to yield similar data to face-to-face interviews (Breakwell, 1997).

On arrival at each venue some time was spent establishing rapport with each informant (Smith, 1995). These conversations lasted approximately 10 minutes. The purpose of the study and the way in which the interview would be conducted was then explained to the informant. The consent forms signed for Quantitative Phase also applied to Qualitative Phase, however, informants were reassured of the confidentiality of the research process and of their right to stop at any time. This occurred during one interview¹⁴. Permission to audio tape the interview was reaffirmed and informants were assured that only the researcher had access to the audiotapes. Informants were also given the opportunity to ask any questions or concerns they had about the study and these were answered. Each interview began with some demographic questions relating to how long they had been in FIFO employment and their current roster arrangements. This allowed an

¹⁴ One partner became distressed during the interview. The interview was suspended until she was ready to continue.

easier start to the interview process and led on to the first open-ended question about the impacts of the roster (Morse, 1994).

Each interview was audio taped and lasted between 45 minutes and three hours, with an average of 90 minutes. Audio taping each interview ensured an accurate record of each informant's experiences and has not been shown to impact on informants' participation in the interview process (Breakwell, 1995; Smith, 1995). Note taking was also used to record ideas and prompts for follow-up questions based on particular responses (Patton, 2002). However, this was kept to a minimum so as not to intrude on the interview process and impact on rapport.

At the conclusion of the interview informants were thanked for their participation and reminded of telephone and email contact details should they want to discuss further any issues resulting from the interviews. Further informal conversation followed allowing me to ensure that each informant was relaxed and comfortable after the interview process. Each informant was offered information about support services that were available should they become upset after the interview (Breakwell, 1995).

Data Analysis

This section outlines the analysis of the interview data. The aim of the analysis was to generate theory concerning the impacts of fly-in/fly-out employment in Western Australia. Consistent with a grounded theory approach this study used an emerging design in which data was analysed as soon as possible after collection and was collected until saturation was reached, that is a subjective determination was made that new data would not provide further information of insights for the emerging categories (Creswell, 2005).

Grounded theory analysis procedures as described by Charmaz (2006) and illustrated in Figure 11 were implemented. These involved two distinct phases of coding: initial coding, and focused coding. Theoretical integration was instigated during the focused coding phase. The aim of coding was to interpret and construct meaning from the data from a number of individuals in order to create a theoretical framework grounded in the lived experiences of the participants (Charmaz, 2000; 2006).

Initial coding

The opening procedure of initial coding consisted of naming and categorizing the data. As soon as possible after the completion of each interview the audio tape was transcribed verbatim. All of the tapes were of good audio quality and accuracy was confirmed by reading each transcript while listening to the relevant audiotape (Charmaz, 2000). Transcribing the interviews myself and reading each transcript a number of times allowed immersion in the data, thus facilitating understanding of the experiences of the informants (Miles & Huberman, 1994; Smith, 1995).

Each transcript was entered into NVivo 7 software where it was subsequently analysed using initial line by line coding techniques (Charmaz, 2006). NVivo 7 provided versatile and comprehensive options for managing the data.

Each transcript was initially reviewed a number of times using both NVivo 7 memoing tools and hand written notes to record my initial thoughts and responses. Subsequently, a broad series of initial provisional codes were identified and recorded using Nvivo 7 coding tools. A constant comparative method was then employed in which I compared data from different participants, compared data at different points within individual's own narratives, compared particular incidents with other incidents and compared codes with other codes (Glaser & Strauss, 1967). The codes were compared and contrasted until saturation was reached. Saturation was deemed to have been reached when no new information was uncovered (Charmaz, 2006; Strauss & Corbin, 1998). The codes were labelled using "in vivo" terms, that is, in terms taken directly from the data, thus anchoring the analysis in the participants' worlds (Creswell, 2005). The properties of the categories were reviewed for both repetition and variation to ensure saturation had indeed occurred (Strauss & Corbin, 1998). Grounded theory studies typically include between 20 and 50 interviews (Charmaz, 2006; Creswell, 1998). No new categories emerged from the final interviews. During this phase some strong analytic directions were established.

Focused coding

Once the initial codes had been identified the second level procedure, focused coding was conducted. During this procedure I used the most significant earlier codes to synthesize and explain larger amounts of data into categories (Charmaz, 2006). This

involved deciding which of the initial codes would most incisively and completely categorize the data, through comparing and contrasting people's experiences, actions and interpretations. These conceptual categories were subsequently further developed and refined and the relationships between them proposed.

During this process memo writing continued as an aid to developing the theoretical framework and recording the analysis process (Charmaz, 2006). The memos included records of the research process as well as ideas and notes about relationships between categories, gaps in the analysis and other reflections (Strauss, 1987). Memos were kept using NVivo 7 memoing tools as well as hand written notes in a journal. These formed an audit trail of the process of analysis thus helping to establish research rigor (Charmaz, 2000; Morse, 1994).

In conjunction with memoing, clustering, as described by Charmaz (2006) was also used during this process to help identify and clarify relationships between categories. Clustering provided a visual diagrammatic representation of the relationships between the codes and categories. It facilitated the ability to conceptualise, explicate and interpret these relationships, and to develop the focus of the discussion of the findings. The theoretical framework continued to be refined throughout the analysis process and discussion of the findings (Charmaz, 2006). The existing literature, including the findings from the quantitative phase of this project, was increasingly accessed throughout the process, that is, prior, during and subsequent to the analysis (Charmaz, 2000; Cutcliffe, 2000; Strauss & Corbin, 1994). This included comparison between the data and the existing literature and clarification of concepts enriching understanding and explanatory power (Fassinger, 2005). Final integration occurred during the discussion of the findings.

Quotations from the informants are used throughout the findings to illustrate themes and to ensure their own words present the understandings. This allows the reader to determine the degree to which the theoretical framework is grounded in the data (Charmaz, 2006; Chiovitti & Piran, 2002; Morse, 1994; Strauss & Corbin, 1998). The quotations are included using the following conventions suggested by Morse (1994). Quotations from informants are indicated by the use of italics. Intonations such as *mmm* and pauses have been removed, and irrelevant words and phrases and sentences have been replaced with

ellipses. Thus (. . .) indicates words have been omitted from the transcript, however the meaning of the passage remains intact. Words in parentheses () explain family relationships of individuals referred to in a quotation.

Research Rigor

A number of procedures as recommended for and by qualitative researchers were employed to ensure rigor of the research process in Qualitative Phase. Traditional quantitative considerations such as internal and external reliability and validity as applied in the quantitative phase were not considered appropriate to the qualitative methodology of Qualitative Phase (Chiovitti & Piran, 2002; Lincoln & Guba, 1985; Merrick, 1999; Smith, 2003). Issues of credibility, dependability, confirmability and transferability have been posited as appropriate measures of rigor for constructivist qualitative research (Lincoln & Guba, 1985; Merrick, 1999; Morrow, 2005; Whittemore, Chase & Mandle, 2001). Consequently, in addition to the data collection and analysis procedures, the following processes were undertaken to maximise research rigor in the above terms.

First, an audit trail was maintained in the form of a reflective journal in which thoughts and processes were recorded throughout the research process (Charmaz, 2000, 2006; Morse, 1994; Smith, 2002; Strauss, 1997; Strauss & Corbin, 1997, 1998). Records of attendance at conferences and seminars, meetings with supervisors, and mining representatives as well as site visits associated with the project were documented. Memos were also included (Fassinger, 2005).

Second, multiple sources of data and methods of data collection were used (Charmaz, 2000; Morse, 1994; Patton, 2002; Strauss, 1987). In addition to interviews with key informants other data including press articles (spoken and written), information pamphlets, government and non-government reports and FIFO employment advertisements were collected and incorporated.

Third, interpretations were checked with informants in a number of ways to ensure accuracy of interpretation and thus maximise rigor (Lincoln & Guba, 1985; Merrick, 1999). Short second interviews were held with two of the FIFO employees and two of the FIFO partners during which I discussed my interpretation of the findings to ensure their

accuracy. A subset of the original sample is considered sufficient for this purpose (Breakwell, 1995). All expressed satisfaction with the interpretations. In addition, all informants from both studies were sent a summary report of the results, inviting feedback and comment on the accuracy of the findings. Only positive feedback was received from the summary report.

Fourth, the findings were presented to a number of different audiences for their comment (Strauss, 1987). These included three international conferences (one in community psychology, one in human development and one in mine management) and three local conferences (one in community psychology, one in psychology and one in mining), as well as to three mining industry seminars, one of which solely represented women employed in the mining industry. The findings were also discussed with a local group of FIFO partners who provided comment and feedback. Additionally, I regularly discussed my research with my supervisor as well as both fellow post graduate students from different disciplines who were also researching in the area, and other psychology post graduate students. All comments and suggestions from each of these audiences were carefully considered. This feedback provided an invaluable contribution to the strength of the resultant theoretical framework.

Finally, a detailed description of the setting and informants has been provided. This allows the credibility and transferability of the findings to different contexts to be assessed based on the similarity between the settings (Burgess-Limerick & Burgess-Limerick, 1998; Chiovitti & Piran, 2002).

Findings

This chapter described the research process for the qualitative phase of the project, including the aims of the study and the associated research questions, the methodological perspectives of constructivist grounded theory and the study design and procedure. The findings from this qualitative phase are presented and discussed in the following chapter.

Chapter 7

Living FIFO: Integrating the Quantitative and Qualitative Findings

Chapter 7 presents the findings and interpretations with respect to qualitative research questions one, two and three. The experiences of FIFO employees and partners and the emergent theoretical scheme are presented and discussed in light of existing literature and the findings from the quantitative phase.

Chapter 7

Living FIFO: Integrating the Quantitative and Qualitative Findings

Introduction

The qualitative phase of the study sought to explore the experiences of FIFO employees and partners of FIFO employees in order to develop an understanding and theoretical scheme of the factors that influence their adaptation to the lifestyle. The previous chapter presented information about the recruitment and demographics of the informants, and procedures undertaken to collect and analyse the qualitative data. This chapter presents the findings and interpretations with respect to qualitative research questions one, two and three described earlier. The experiences of FIFO employees and partners and the emergent theoretical scheme are presented and discussed in light of existing literature and the findings from the quantitative phase (Chenitz & Swanson, 1986; May, 1986). Quotes from the informants are used to illustrate their experiences in their own words (Breakwell, 1995; May, 1986; Morse, 1994). The implications at the legislative, company, community and family levels in supporting FIFO employees and their partners (qualitative research question 4) are presented in the final chapter (Chapter 8).

The quantitative phase, as described in Chapter 5, established that both FIFO employees and the partners of FIFO employees were within the norms for healthy functioning on the scales and sub-scales of the measures of psychological wellbeing, relationship satisfaction and perceptions of family function, and that there were no statistically significant differences between the scores of the two groups on any of these measures. Further, there were no significant differences when data were analysed according to family type or profile of absence. Thus, despite perceptions that regular FIFO employment related absence would have adverse impacts on various aspects of wellbeing, the group of FIFO employees and partners in this study reported similar levels of psychological wellbeing, relationship satisfaction and perceptions of family function to the general Australian population. By examining the experiences of FIFO employees and partners this qualitative phase of the study sought to develop an understanding and

theoretical scheme of their adaptation to the FIFO lifestyle and thus explicate the findings of the quantitative phase.

Living FIFO: The Experiences of FIFO Employees and Partners

The following section describes the experiences of employees and their partners living FIFO in terms of the central categories that emerged during analysis of the data, namely: the notion of “informed choice”; work, emotional, physical and community challenges associated with living FIFO; and meeting the challenges of living FIFO.

Choosing FIFO

Central to both employee and partner experiences of FIFO were their reasons for choosing FIFO employment and the processes undertaken in making the decision.

A five day block of time allows time to relax yet still accomplish things, we're able to place our children in schools, live in a stable environment and still have a rewarding job at high level in mining operations

It's nice having the company feed and clothe me for nine days a fortnight

It's just the lifestyle - it's really great - once you're here the first week can drag sometimes but the second week of a two week is just one day after the other and you just work it and you know when you come out you've got a week off while everyone else is working and it's great - especially if there's no kids around and it's not school holidays

I love being out in the bush as well – living out here, I could do it but I miss Perth as well because I like Perth, I like the beach and I surf and so I love FIFO because I get the best of both

Apart from Sibbel and Kaczmarek (2004), little of the earlier research, as reviewed in Chapter 3, examined the processes of choosing FIFO employment, focusing rather on the advantages and disadvantages and impacts of the FIFO lifestyle once people were so-employed (e.g., Gent, 2004; Keown, 2006; Taylor, 2004). However, the FIFO employees and their partners in the qualitative phase of this study specifically described the processes they underwent when considering FIFO employment and as such this emerged as a central

category. In particular, most informants engaged in a process of what they described as a form of “cost/benefit analysis” in which they compared the advantages and disadvantages of the FIFO lifestyle with those of non-FIFO employment for their particular circumstances. The way in which they undertook this process depended in part on their individual or family needs at that time. As one FIFO employee described, *I’m not saying FIFO is for everyone, but it can be a good option for those who make an informed choice.* The notion of “informed choice” refers to a decision that is based on relevant knowledge, is consistent with the decision maker’s values and that is behaviourally implemented (Marteau, Dormandy & Michie, 2001; Michie, Dormandy & Marteau, 2004).

The decision process had two components, the work perspective and the home life perspective, each of which had individual, relational and family impacts. FIFO employees generally first explained why they chose to work in the mining industry. The two main attractions were *career opportunities* and *good rates of pay*. Those pursuing a “mining career” were more likely to describe a long term commitment to the sector. This was distinct from those who were there predominantly to take advantage of the benefits associated with the generous income levels of the time, and *the opportunity to save and get ahead*. These were more likely to be operating personnel such as machinery operators whose generic work skills (e.g., truck driving) were liable to be more applicable to employment outside of the mining industry, *the main and probably only aspect I like and it being the real reason I am here is the money*. Associated with the levels of pay were the *economies of living on site*, that is, employees valued the savings associated with having their food and accommodation provided on site, that there were *no overheads of Perth living*, where the *food is supplied, there is no cooking*, thus *you can live at work with virtually no costs*. Related to aspects of the “mining lifestyle”, some employees also valued the opportunity to *live in the bush*, while others described their appreciation of the way in which the *remoteness engenders a familial community feeling*, enjoying the *very friendly and sociable environment*, and *meeting like-minded people* as well as the opportunities for a *social life with friends on site* such as having dinner together in the camp. Living on site was described by some as providing *opportunities for new and exciting life experiences, escaping the ‘rat race’* and the chance to *meet many more people*

and cultures than you would normally. One employee took advantage of his time on site to undertake external study *with no interruptions.* Thus, FIFO employment was perceived by employees as offering various other individual benefits in addition to career opportunities and good rates of pay.

Prior to the introduction of FIFO employment, mining employees' only option was that of residential employment, usually located in rural or remote areas (e.g., Newman, Kalgoorlie or Wiluna) (Storey, 2001). Having the current choice of FIFO and residential employment was valued by informants to this study, thus adding to their satisfaction with the lifestyle. Some explained they would only ever "do" FIFO and never consider residential employment, *having grown up in a mining town I don't want to live there again, or having bulk days off at one time, I don't think I could go back to working and only having weekends off,* while others were more likely to move between FIFO and residential depending on their needs at a particular time.

I've always said to R (wife) as soon as we have kids I'll never do it, I want to see our kids, I know I'd miss a lot like two weeks, three weeks of every month out of their life, I couldn't do it. If it was a mining town it would be a completely different story like Pannawonica because you can come home every night

OR

Before B (two year old child) was born I wouldn't have done it, but I would now. I would have said no just keep doing FIFO but now the family's a bit more important than that and I would go and live in a mining town so - not necessarily Kalgoorlie though, I don't like Kalgoorlie.

The choice between FIFO and residential employment was particularly related to employment opportunities, life stage and access to material and psychosocial resources for individuals and their family members. Some employees wanted to conserve their financial resources and not waste the advantages of the *good income* believing it was *more expensive to live in a mining town* than in a capital city.

There has to be opportunities for wives, girlfriends, kids – the same opportunities that they would get if they stayed in Perth and also the cost of living. The cost of living in the bush is ridiculous – you know they are complaining you know they are complaining they can't get doctors in the bush but why would you live out there – there's no incentive.

Reasons employees and partners chose FIFO over residential employment included the opportunity to *live in your own home* or to live near the ocean, as one partner explained, *he very much likes being near the ocean but it doesn't worry me too much, I like country towns, you know I like the idea of Kalgoorlie if it wasn't so rough in places and so expensive to live.*

Both employees and partners described the advantages of access to a broader range of educational, health, social and other facilities in Perth or larger regional centres for themselves and their families. In particular, those with secondary school-aged children valued the access to a variety of secondary schools, *it suits my background and still enables me to educate my children in the good schools of Perth.* Greater career and employment opportunities for partners and children of FIFO employees were also commonly cited advantages of the lifestyle by both partners and employees. These preferences of FIFO employees and their families were based in part on their perceptions that in recent years, government, both state and federal, together with mining companies have failed to adequately provide and maintain accommodation and various health, education and other such facilities in many of the “mining” towns. Their understandings were based on personal experience, anecdotal evidence or reports in the media including statements made by politicians (e.g., Bowler, 2001).

Similar to Sibbel and Kaczmarek (2004), the current study found that different aspects of FIFO employment appealed according to the life stage of the employee and their family. For example, single employees of all ages for the most part valued access to a wider range of social and sporting facilities, and more opportunities to meet potential partners than they believed would be available in smaller mining towns, although some did acknowledge the impact of *FIFO stereotyping* on their ability at times to initiate

relationships. For example, some FIFO employees reported that occasionally potential partners were unwilling to begin a relationship with them because of a perception based on anecdotal evidence that FIFO relationships *were unlikely to be successful* and FIFO caused relationships to break down because the FIFO employee *was away so much*. However, others successfully formed romantic relationships on site, *I would describe myself before I met my wife as a serial boyfriend - I was rarely without a partner so to speak, both on site and in Perth. We're talking about a long period of time but some on site and some off.*

From another perspective, some informants chose FIFO so they and their families could live near to and support older or other relatives who had particular needs. *My wife wants to be near her elderly parents who need our help*. Similarly, for some divorced or separated people FIFO employment facilitated easier access to their children from their former relationship. For example, the children could reside with their FIFO parent while that parent was on break in Perth, thus allowing them to share both weekday and weekend activities.

I love it because I'm back every weekend – I have a 5/2, 5/2, 4/3 roster so I'm back every weekend and it's really, really good – my kids don't live with me, they live with their mother so I need to be back on weekends otherwise things get out of kilter with regards to my kids, so the ability to see them every weekend is enhanced on this roster.

A number of FIFO employees and their families also preferred living in the city because they wanted to be close to the coast and the lifestyle it offered, as they did not like the *isolation of the outback* and the extremes of climate (e.g., cyclones or high temperatures) often experienced in rural and remote mining towns.

In keeping with the preferences displayed in Table 10, a small number of employees stated that although their preference was to live in a mining town, they had taken FIFO employment to meet various family needs, such as having a spouse who did not want to live in a mining town, meeting a spouse's career needs, or having a child whose medical issues could only be met in a capital city, *we have a disabled son who needs specialist care*. Thus, although it might not be the preferred option of all family members, FIFO employment did provide mining families with flexibility to meet career

and family needs in a way that might not otherwise have been possible, as one employee explained;

if we moved to a mining town it wouldn't last. If we moved to Newman or Tom Price it just wouldn't work because she doesn't like that sort of lifestyle. She doesn't like the towns. I have to agree with her. It's not a nice place to bring kids up either. And we are chalk and cheese in that regard. I'm from the country, from a small country town, and she's from the city.

Thus, the desires of the FIFO employee did not always take precedence over the needs of other family members when some families considered their residential and FIFO employment options.

FIFO employment was also portrayed by informants as providing more stability for individuals and families. Unlike residential mining families who have to endure the disruption of moving the whole family to a new town when they change employers, for FIFO employees changing jobs *is as simple as me changing planes and the family gets to stay where they are*. The ease of changing employers was also perceived as helping to shield FIFO families from the often devastating effects of the “boom and bust” cycles which regularly impact on the Australian mining industry¹⁵ (ABS, 2001). Having FIFO employment meant the employee could change jobs with minimal disruption to, and stress on the family, with one employee stating *having Perth as a base means if the mine closes then it means no movement of family to the next site*. Being willing to consider FIFO employment also meant employees believed they had a wider pool of potential employers, thus further protecting them and their families from the regular downturns experienced in the industry.

In addition to providing residential stability for their families, FIFO employment offered employees a greater opportunity to “shop around” for employment conditions that best suited them, and often their families, without disrupting their family circumstances.

¹⁵ For example, in 2009 BHP Billiton closed their Ravensthorpe residential nickel mine after only 2 years operation, retrenching approximately 2000 employees who had moved with their families to that rural area for a mine life expectancy of 30 years (Freed, 2009).

Employment conditions included career opportunities and those associated with managing the interaction between work and home lives. As described in Chapter 2, successfully negotiating the interaction between work and home lives has been associated with greater individual and family wellbeing and relationship satisfaction resulting from increased psychosocial resources and skills (Carlson & Grywacz, 2008; Kirchmeyer, 1993; Marks, 1977). For example, flexibility in the choice of roster was one such employment condition that employees and partners carefully considered.

Everyone will have their own unique experience but I think generally because rosters are getting a lot easier, I think we operate a 9 and 5 and an 8 and 6 roster and they are much more family friendly and at least you can get to your kid's soccer game every second week so that's easy and I think the financial side keeps people going.

It was perceived that having an option in roster arrangements increased access to psychosocial resources allowing employees and their families to meet various personal, family and financial needs and thus impacting positively on their wellbeing. However, it was acknowledged the availability of roster options could depend on whether they worked for a contractor or mine owner and their particular job role.

A number of employees and their partners preferred FIFO employment because they believed the employee would be able to participate in a wider range of personal and family activities on a FIFO roster than they would working some of the shift rosters available in residential mining employment, or in a more traditional “9 to 5” arrangement that required commuting in “peak hour” traffic each day in the city. These “chunks of time” at home enabled employees, for example, *to conduct business during business hours*; to attend school events; or to provide greater help to their families with day-to-day household “chores”. As one employee described *I believe I have more quality time with my family than working in Perth as a plant operator and leaving home at six am and returning home at six pm, six days a week*, yet another said *you're guaranteed the time off at the end of every stint*, and another *five days off in a row in nine is much better than a single weekend, especially having work days off to participate in school activities*, thus adding to their own and their families' psychosocial resources.

Those employees who had children discussed the opportunities a FIFO lifestyle presented to interact with their children describing how they have *more direct quality contact with my kids on my time off*, being able, for example, to *participate in school activities*, and to *take our boy to school five days out of ten*. Similarly, partners valued these opportunities for interactions, as one described;

The same as people who live in Perth all of the time, you see it all the time where the wife is at home bringing up the children the husband is the 9 to 5 Monday to Friday he is gone at 7 before the kids wake up, he's home 6, 6.30. 7 and maybe have half an hour with the kids, there's no quality in that.

Yet another, whose wife worked outside of the home, described the value in being there on weekdays for his children;

For myself I prefer to have 7 days off than to have every Saturday and Sunday off, Saturdays and Sundays my wife is already here, there is no need for me to be here then. I'm much better off being here during the week when the kids come out of school and look after them. At least one out of 3 weeks they've got somebody at home when they come home.

The impact of changing life stages was evident as one employee with older children acknowledged that participation in school activities happened less as the children got older and the focus then was more likely to be sporting involvement. Some employees whose partner was available during the week also valued the opportunity to have *time off during the week to spend time alone with my wife while the children are at school*.

Associated with this was an appreciation of the separation between work and home lives, *home time is home time and it is easier to leave work behind*. In addition, it was perceived as easier to maintain this separation because *when I'm at work I work hard and when I'm at home I can completely forget about work because I can't duck into work on a whim*. Some believed that this separation resulted in the time at work being more *intensive and focused*, as one employee stated, *you work hard for two weeks and then are with the family one hundred percent for one week*, and yet another, *I don't really get disturbed*

when I am away from site and when I'm here I'm pretty focused and you don't get distracted, I think you get more done in a shorter space of time.

The “time off” was used by some employees to assist in family businesses such as with farm (lifestyle or producing) or small business (e.g., franchise business or property investment) related activities. Indeed, such informants believed they would not be able to have these lifestyle opportunities with residential employment. They purposefully chose FIFO employment, as one stated because

I very much enjoy the week off because I have time off during business days so I can do all kinds of jobs you cannot do in Perth during the weekend, for example talk to and visit shops, property managers and tradespeople.

Yet another stated,

my R&R incorporates at least three conventional business days so annual leave doesn't have to be taken for trades personnel to do home maintenance or for accepting deliveries from stores.

For some, the extended time at home enabled them to establish a small business which in time would allow them to leave FIFO employment and become self-employed.

A number of others from across all life stages purposefully chose FIFO employment because of a perception that it allowed them to better “balance” their home and work lives because *life isn't all about work*. In particular, they *enjoyed the long periods off to travel* during their break, and were *able to go away on short holidays more frequently*, because *you get the week off, not just the weekend and you get the money, you get more money to spend so you can do things, you can go away for five days, even to Bali* with the result that *I don't need as many holidays as R&R is like a holiday*. There was a perception that because of the rosters *it's easy to accrue annual leave for trips etcetera and you get more days away from work than residential people*.

The partners of FIFO employees were generally supportive of their FIFO spouse's decision to have FIFO employment, and many described the collaborative manner in which the decisions were made. *We make decisions together which is important. For some people it will work and for some people it won't*. In particular, they cited a reason for choosing

FIFO employment was that it provided opportunities for the needs of each partner to be met. For example, the FIFO employee could pursue a mining career while the partner could maintain a city-based career and have access to friends and other social support, opportunities which were not regarded as being available in “mining towns”. Thus from one partner’s perspective,

He’s the main bread winner so it has to be something he likes doing. He’s from a farming background he likes working on the land and outdoors. We’d gone into banking after school and he hated it. And the hours of the bank long and unforgiving and you are paid crap. And we never saw him and we just had P (their first child) so he was gone at sparrow’s and back late at night so we weren’t happy and the money was not enough.

Yet another explained,

He needs to be out there and with mining men, he’s a hands on mining man, he needs to be out there with the workers, hands on doing it, up and down, get dirty get filthy and that’s why I said to him well that’s your passion so that’s what you should do.

For one couple, the income associated with FIFO employed also allowed the partner to be an “at home mum”, *Money. It’s so I can stay home. We had to, we wanted that. When we had children he was dead against me going out and working so we had to find something.*

Similarly, some partners with children based their decisions on their children’s continued access to “city standard” educational, social and sporting activities rather than the more limited facilities provided in the remote towns. However, as detailed in a following section, despite acknowledging the benefits, a small minority of partners would have preferred for their partner not to have FIFO employment. These couples did not have dependent children whose needs had to be also taken into account, but were at different life stages (i.e., grandparents or young career couples), and had been doing FIFO for varying lengths of time (i.e., less than one year or greater than ten years). Although they had originally agreed to the lifestyle, these partners found over time they had not coped as well

as they thought they would, but did not feel that a change to non-FIFO employment was a viable option for their relationship. As one partner explained:

I suppose I expected that I would cope a little bit better than what I have, I kinda expected that my life would be more organized without B (husband) around and that even though he was away and I wouldn't like it but things would be less complicated but it's not really (...) I guess I just cope because I have to, I don't feel like I've got a choice and because I've want him to be happy. I don't want to stop him from doing something that he really wants to do, so, you know.

Thus, it can be concluded from the preceding discussion that informants generally seemed to make purposeful and informed choices to undertake FIFO employment based on the notion that *the benefits outweigh the costs*, that the lifestyle associated with FIFO employment would considerably increase individual and family access to material and psychosocial resources, and that the net gains in personal and family resources would outweigh any losses. The decisions to undertake FIFO employment are based on each individual or family's unique needs at that particular time in their life. The particular resources associated with FIFO employment include the separation between work and home lives, above average income for professional and award employees, access to good health, education and employment opportunities and extended periods of time at home that provide the opportunity to undertake personal, family and social activities. These findings support and extend those of earlier FIFO studies as reviewed in Chapter 3. In particular, the benefits of the lifestyle as described by Reynolds (2004) and Taylor (2006) for offshore oil and gas and mixed partners and couples are extended to a solely land-based mining sample of singles and couples at different life stages. Furthermore, the current study extends earlier findings by conceptualising the attractions of the FIFO lifestyle in terms of the notion of informed choice.

The earlier review of the literature (Chapter 2) on the interaction between work and home, and in particular work-family facilitation, concluded that access to personal and environmental resources can result in positive impacts on the wellbeing of individuals and families (Grandey & Cropanzano, 1999; Hill, et al., 2007; Voyandoff, 2004b). FIFO

employees and families have the ability to actively choose an employment lifestyle that allows them to maximize their access to resources that are appropriate to their particular needs at a particular time, and the flexibility associated with the lifestyle (e.g., roster options, ability to relatively easily change employers to maximize employment conditions) contributes to this.

Living FIFO: Acknowledging the Challenges

Although FIFO employees and partners described making informed decisions to engage in FIFO employment based on the perceived advantages of the lifestyle related to increased access to personal and environmental resources, such as the separation of work and home lives and the “chunks of time” at home, a number of challenges and stressors associated with living FIFO, in particular emotional, social, work-related and physical challenges, emerged during the analysis of the data. A number of these, for example loneliness, were common to both employees and partners, whereas others such as *sole parenting fatigue* were specific to one group (i.e., partners in this example) or the other, and reflect those impacts described in earlier research studies (e.g., Beach, 1999; Reynolds, 2004; Taylor, 2004). However, the sum total of challenges was not perceived as outweighing the advantages gained for FIFO individuals and families as a result of having access to the range of psychosocial resources described in the section above, and generally, as reflected in the findings from the quantitative phase, employees and their families adapted to and coped with the impacts of the lifestyle. The challenges for both employees and partners are described in more detail in the following section under the central categories of work related, emotional, physical and community challenges.

Work-related challenges

FIFO employees described a number of work-related challenges associated with their FIFO employment. While the purpose of the current study was not to investigate the impact of FIFO employment on work satisfaction, these issues are included because, as described in Chapter 2, they have the potential to impact on psychological wellbeing, relationship satisfaction and functioning within the family system (Brotheridge & Lee, 2006). The earlier discussion of “crossover” effects from work to home established that an individual’s experiences in the work domain can influence their wellbeing, both positively

and negatively, of others in the home and family system (Matthews, Del Priore, Acitelli & Barnes- Farrell, 2006).

While these work-related issues were not generally regarded by employees as outweighing the benefits of the employment practice, they did, however, present distinct FIFO related impacts that had to be adapted to and coped with. For example, although valuing the separation between their work and home lives, some employees described difficulty maintaining professional relationships outside of the minesite because of the perception that *my time off is for myself and my family rather than for involvement with professional groups*. Others described problems associated with ensuring adequate communication with their counterparts on other rosters to perform their work duties in an optimum way. Some referred to a feeling of institutionalization associated with living and working in a closed environment where there were *endless rules and guidelines to live by* which could mean *you are a product of the company and that's about it*. FIFO employees acknowledged however, that all workplaces have various job-related issues that have to be managed and that those associated with FIFO employment were *just different rather than necessarily greater than those in other workplaces*. Some employees and partners suggested that the separation in *time and space* between work and home afforded by FIFO employment buffered families to an extent from the potential negative impacts of some work-related stressors as described above.

Interference from work while at home.

Interference between work lives and home lives has been shown to impact on individual wellbeing and functioning within family systems (Greenhaus & Powell, 2006; Matthews, Del Priore, Acitelli & Barnes- Farrell, 2006). As described in the previous section, FIFO employees and partners particularly valued the separation between home and work lives that FIFO allows, that is, the ability to have *two separate lives* with minimal interference between the two. This potentially allows employees to fully concentrate on their specific roles in each location. However, for a small minority of employees this was not always the case. Those in management positions were more likely to experience some interference from work while they were on their break at home. This included occurrences such as phone calls from site or being required to attend meetings at Head Office during

the home break. Staying at the mine longer than was expected or having to go back to site earlier than expected also impacted on the separation of work and home lives. Both employees and partners described the negative impacts such occurrences could have on their time at home while on break. When this happened some partners felt imposed upon by the company and that they were powerless to change the situation. *If they focused on well-being of their employees, if they focused on being family orientated, you know we sell them two weeks of our lives or one week of our lives out of every three so they need to have more support for the families.* This sometimes resulted in tension within relationships and placed an extra burden of work and responsibility on the at-home partner who then had to *fill in* at home while the employee undertook what were described by some as *unnecessary extra tasks* imposed by the employer. However, such interference was not described as a major challenge.

Emotional challenges

Consistent with previous research findings (e.g., Beach, 1999; Reynolds, 2004; Taylor, 2006) both employees and partners in the current study described a number of emotional challenges particularly associated with the FIFO lifestyle. As described earlier, some, such as loneliness, were common to both employees and partners, whereas others were experienced by one group only. These experiences also varied across the life stages, and the way in which people coped with these challenges depended on particular personal factors and resources available at the time.

Loneliness

A feeling of social isolation and missing family and friends were particular issues for many employees. Some, who were not in long-term relationships, described a sense of social isolation associated with having time off at home while others were at work *because when you're on break it's an unnatural lifestyle because while most people are working during the day you can become bored at home resulting in drinking or spending money on things you wouldn't normally*, thus, for some *most of your friends end up becoming people you work with which leads to further isolation from society*. Similarly, those in long term relationships and those who had children described difficulties associated with missing their families,

I have a pretty rewarding job but I do miss my family like crazy and the way I put it is that as soon as I knock off from work when I'm on site, every hour between then and when I start work the next morning is just wasted time, you feel like you're wasting a fair chunk of your life, and not being home to help during difficult times, for example *not being there to give my wife support when she needs support*, being able to get home quickly in a family emergency or being home for special occasions such as birthdays or other family events. One FIFO employee described feeling a sense of guilt for not being there to support his partner in times of need.

However, for partners, loneliness was more likely to be described as an issue by those who did not have children, a finding similar to that of Reynolds (2004).

I'm not good at being by myself so having this much time to myself and not being able to talk to some-one else about things, I feel like I started going a little bit crazy – but nothing too extreme but you know, just being alone all of the time and coming home every night and all of my friends have partners, you know husbands, boyfriends and you don't want to, you know and I'm not the kind of person who'll go and intrude on them at any given time to have some company, so yeah it's kind of, I don't think I expected to be as lonely as I have been.

Although those with children might miss the adult companionship of their FIFO partner during the time apart,

not having your companion there where you can sit together and you don't have to communicate verbally but you are communicating and in bed to reach out to touch them or even to nudge them to move over because they are snoring. To have something happen to you that is quite exciting that's happened at work or someone's told you and you want to tell him and he doesn't phone you that night or I can't get in contact with him so it has to wait and the excitement's kind of gone,

the company of and activities associated with their children provided valuable opportunities for social interaction, especially those with older children. Such opportunities

were also available to those partners who had either full-time or part-time employment outside of their home. These findings support earlier research which concluded that in addition to financial and career rewards, partners of FIFO workers might undertake employment outside of the home to provide a sense of purpose and as a means of social interaction when their FIFO partners were absent (Clark & Taylor, 1988; Reynolds, 2004; Solheim, 1988; Taylor, 2006). The close proximity of extended family members also offered social and other support and resources for FIFO families. For example, family members assisted with child minding, transport of children or emotional and practical support during difficult times, as one partner explained *for instance N (elder child) was getting croup and invariably I'd hear her, call the ambulance, call my mum, all very matter of fact.*

The ability of the FIFO employee to get home in an emergency was also an issue for some partners,

I said to G (husband) it doesn't matter whether he comes home every night or not, I was a bit concerned about being on my own if something happened that was always a concern or if he died or anything horrible like that that I was here by myself.

For this partner, an emergency did happen while her husband was away on site, she described how she competently dealt with the situation on her own and how the experience resulted in her feeling confident to cope with any possible future emergencies on her own.

Communication

For some employees the availability and quality of communication with home impacted on their degree of loneliness. Communication depended on both the availability of communication equipment on site, for example mobile phone or internet access, the employee's position and hence access to communication facilities on site, as well the willingness or ability of family members to engage in regular communication with the employee while they are on site. One FIFO father described his *feeling of being cut-off from my small children as they can't do a great deal of communicating over the phone.* However, there was acknowledgement by those who had been doing FIFO for a number of

years that communication between the minesite and home had improved with the availability of better technology, as one partner explained,

when he first started there used to be such things as a little phone booth . . . The queue, girlfriend's husbands were queued up for it. . . So sometimes when people waited they could hear people's lives, it was like a little Melrose Place out there. People's lives were drawn out in these phone calls. Sometimes they would just give up and walk off. After a while we got mobile phones so we could talk quite easily.

Those employees who had access to the internet or phones in their work or in their room in the village, or were at a site with mobile phone coverage were more likely to report satisfaction with the availability of communication with home than those who did not have such access, and thus experienced less of a sense of isolation from their families. The availability of communication between home and site was dependent on a number of factors including the location and size of the mine, company policies and the employee's role on site. As explained by one employee,

I'm kinda lucky, I'm the lab technician there so I have my own little laboratory with a computer and the internet and a phone so I'm in the lucky spot where I can just kinda call anyone and check my emails for everyone else. Everyone comes in and uses my phone which is fine by me.

Some informants were critical of poor communication facilities provided on site describing it as the *employer's lack of support for families*.

The quality and availability of communication was also described as an emotional challenge by partners of FIFO employees. They were less likely to feel emotionally distant from their FIFO partners if there was easy access to communication between home and site.

He's got a mobile so I can just call him whenever and he calls me whenever, like we speak probably like 4 times a day, like he'll call me at work like when he's on a break or something like that and I'll call

him when I've finished work and then speak a couple of times in the evening, so yeah, we speak and that's no problem.

There was however, great diversity in the amount of communication individuals wanted or expected during the FIFO employee's absence on site. Most communicated daily, sometimes a number of times per day, while for a minority of informants, it was less regular.

We make a conscious effort to speak to each other each once a day, we're on the phone or text messaging – sometimes we may not have a lot to say, just say ringo to say hello, how was work, nothing basically, just ringo to say hello and other times we'll be on the phone for 20 minutes or half an hour, it sort of varies a bit - We use email – we flick each other a funny email - so if I get particularly funny emails at work I forward them to him.

Some, for example those with children, communicated at a set time each day, while for others it was less structured. As the FIFO father of an 11 year old boy explained, *our son has adjusted to me being away and I talk to him every day by phone and help him with his homework over the phone.* Most employees and their families successfully negotiated a communication strategy that worked for them and were generally understanding of those occasional times when communication arrangements were not adhered to.

Negotiating family roles

All families face the challenge of successfully negotiating family roles and responsibilities (Boss, 1988), and FIFO families face particular challenges adapting their family roles and responsibilities to the regular comings and goings of the FIFO family member. Earlier FIFO research studies with families with young (Gallegos, 2006) and primary school-aged (Sibbel, 2001) children from both the oil and gas (Reynolds, 2004) and land-based mining (Beach, 1999, Taylor, 2006) reported evidence of these effects. Similarly, land-based mining FIFO families in the current study, both childless couples and those with children, acknowledged issues associated with successfully negotiating family roles for when the FIFO employee was both home and away. This included use of time

when the FIFO employee was home, allocation of household tasks and responsibilities, and having *routines for raising children that are consistent*. Thus as one partner explained,

G (husband) takes his cues from me so if I jump up and say no or so discipline wise even though we both discuss it we're both similar in how we do it, so if I jump up and say no it's time for bed, ignore the crying I mean he's (one year old son) good, but occasionally he'll cry and carry on for 10 minutes and I say let him cry and carry on, you can't let him get away with it and let dad be the good guy just because he's come home.

Successfully negotiating the roles was described by one employee as particularly important because there was the risk that otherwise *you can be a stranger in your own family*. For employees, there were particular issues associated with *adjusting to life in each place*, because *you can become selfish because when you're on site you live a single lifestyle* and so it was important *to avoid upsetting the family routine when you come home because your wife has been taking over the primary responsibilities for the family so you have to watch what you do*. Employees described a number of strategies they used to help them *slot back into the family* including taking the time on the plane to *leave work behind and get myself back into my family headspace*. Such strategies facilitated adjustment for both the employee and the family.

The allocation of household tasks and responsibilities also required particular attention for those employees living in shared accommodation rather than in traditional family arrangements. Those single employees living on their own also had to arrange household tasks, for example, *the day of the week I return to work is the same as my rubbish collection day at home. I can never use my rubbish bin as I have to rely on someone else to bring it in*.

The manner in which families work out how to function effectively during the home and away times depended on a number of factors including the life stage of family members, the presence and age of children, whether the at home partner worked either full or part-time outside of the family home, and access to support such as extended family members. Each family negotiated their roles in ways that reflected their needs at that time.

For some, this ongoing process could be difficult as they tried to meet the requirements of each family member. For example, the at home partner might expect their FIFO partner to take over all household chores while they are home, while the FIFO partner saw the time at home as *their time to relax because they have been working long hours while on site*. However, despite the difficulties, families generally managed to allocate their family roles in a way that allowed the family to function effectively as reflected in their scores of the Family Assessment Device in the quantitative phase of this study. Indeed, for some, there was a perception of having greater time resources as *all families have to work this stuff out and in some ways it's easier for FIFO families because we have longer periods of time together than people who only have weekends to get things done*. Furthermore, the constant coming and goings within the family could make FIFO families more aware than non-FIFO families of how roles change within families and of the need to actively negotiate these.

I think it's just learning to work with the other person I guess, learning to know the other person's needs and combining and balancing the two. We're still figuring each other out and probably will be for a very long time. It is exciting, it's a good thing but it can be frustrating.

Challenging times

Despite the positive findings presented above, informants described some situations when the FIFO lifestyle resulted in times of greater stress on individuals and their relationships than would be perhaps for families who did not have employment which required them to absent from home on a regular basis. For example, the birth of the first child, when the new parents were learning and adjusting to their fresh roles, when they wanted to share the experiences and provide each other with practical and emotional support. For employees the issues were more associated with not being there to support their partner and also missing out on developmental milestones. Similarly, the issues for partners were often associated with having to manage on their own and not having their partner to share significant events with, thus *FIFO was hard when then kids were really, really young, when they were babies in the sense in that whenever there was an emergency*

there was no-one else to rely on, it was just me. The birth of the second child could also be difficult and particularly for the “at home” parent because, although parenting skills were not so much of an issue, having to manage and “get up to” two children when the FIFO parent was absent, especially if the children are close in age and there is not much family or other social support available, as one mother described,

the first six months was probably hideous. You know lack of, probably not so much with the first one, with the second one it was terrible because you know L was seventeen months old when I had E. She was a baby and you know when you're up and down every two or three hours it was lack of sleep that was the hardest thing and then he'd fly in and he needs his rest whereas I just want to drop everything and say you take over but it just doesn't work like that.

Other challenging times included health-related matters such as medical emergencies, chronic or terminal illness or the death of family members or close friends.

I think the worst thing is contact you know if something. L's (daughter) got bitten by a red back about three months ago in the morning and J was at work and you can't get, I mean it wasn't, I mean it was scary, and it was life threatening, cause it was a red back but it was ok at the end of the day.

For some families, especially those without adequate support, such situations could put pressure on the FIFO employees and their families during both home and away times and put them at risk of dysfunction (Boss, 1988). However, when employees and partners discussed such situations in hindsight there was evidence that generally FIFO families managed these difficult times, *I'm not the kind of person who wants to talk about their problems with other people, that's just me, I just grin and bear it and cope on my own and that's basically what I do.*

Challenging partners

A small minority of partners acknowledged their extreme dislike of FIFO employment and described the distress it caused them. Although each of these partners was at a different stage in their life cycle, and none had dependent children, there were

common aspects to some of their experiences. Each had difficulty coping with various aspects of the lifestyle but endured it as they saw it as being a non-negotiable part of their relationship with their FIFO employee partner. The employee had already been in FIFO employment when the relationship began and as such it *came with the territory*. For these couples, having FIFO employment was not seen as a decision that was made jointly by both partners in the relationship. One partner described this as not having power or choice in the relationship with respect to this aspect of the relationship, and despite her unhappiness and extreme dislike of the lifestyle, felt powerless to change anything, saying,

I don't really feel like I have a choice in it because like I said, he's pretty strong willed and I think if I said that's it you're not going I refuse to be with you if you go, he'd say I'm going, you know, he doesn't generally pander to that kind of stuff (. . .) I get frustrated some times because I feel I can't say to him look I can't do this anymore and he would go OK if it's too much for you then I won't do it; so I guess I just cope because I have to I don't feel like I've got a choice and because I've want him to be happy. I don't want to stop him from doing something that he really wants to do, so, you know.

Another partner described their situation as *non-negotiable*, *if he has work to go to he goes, he never misses, he's never been late*. Such partners fit into the group who are described in Watt's (2004) model who accept FIFO in the short term but limit the time they plan to do it. Each described their ability to cope with the lifestyle relied in part of their partner's commitment to leaving FIFO employment within a set period of time. This time varied between one and five years and for these partners it was a matter of "just surviving" until the FIFO period was over and they could have a residential relationship.

These partners instigated various strategies to help them better manage and cope with the lifestyle, such as access to various psychosocial resources including support from close friends or family, having employment outside of the home and access to professional counseling. There was a seemingly "reluctant" acceptance that *FIFO employment came with the relationship*.

As depicted in the Gallegos (2006) model (see Chapter 3, p.63), for these partners the most difficult times were the day/s immediately prior to departure and the day/s immediately after departure, in particular, the sadness associated with the anticipated and then the actual departure, *usually when he leaves the next day or two after that are pretty bad, it's just a bit depressing*. Each of these couples was on a longer away, that is 2/1 roster, and the partners perceived the length of time away, that is two weeks (and therefore two weekends) contributed to their difficulty adapting to the lifestyle, any longer time away was not regarded as possible.

For some other partners, although FIFO was not necessarily their preferred lifestyle, they were willing to accept it for a time because of perceived benefits to themselves and/or their partner and family, *the opportunity for him to get ahead, I see he's come a long way since he's been working out there with all the experience which he wouldn't have got in town*. They regarded the positive impacts and influence on the relationship made the negative aspects of the lifestyle worth *putting up with*, acknowledging that *there are issues for families with wherever you work, some are just more than others, you have to find what works for you*.

Intimacy

Challenges associated with physical and emotional intimacy were described by some employees and partners. These individual issues were dependent on a number of work-related or personal factors such as roster, life stage, expectations and awareness. For some on longer “away” rosters (e.g. 2/1) the consequent reduced opportunities for physical intimacy were perceived as stressful for the relationship, as one partner stated, *you learn to do without the sensual side because they're away so much, I know of people who have diverted that attention elsewhere but I wouldn't do that*, and for another, *our physical relationship is pretty you know, minimal, we don't have sex very often*.

For others, particular rosters (e.g., 9/5 or 3/1) could make it difficult to become pregnant or to have sexual relations if the female partner's menstrual cycle did not fit in with the roster, *a massive issue for me as well is working around R's (partner) period as well, it's massive and I know a number of blokes who have done it as well, on 3 and 1 you have to work your roster so you're not out when she gets it - otherwise you miss out*. Yet

others found particular rosters (for example five days away and two days home) did not allow enough time to *properly reconnect emotionally* with their partner when they were together. For example, while they valued the shorter time away (i.e., five days), most of the two days at home was spent catching up on sleep and fulfilling necessary tasks.

Fidelity of FIFO couples while they are apart has not been investigated in detail by earlier research and was particularly raised in the current study in relation to the location of the FIFO accommodation. As stated in Chapter 1, FIFO camps and villages can be located within a town or on a minesite remote from any established town. Where they are located in a town FIFO employees have access to that town's facilities and for one partner as such provided a perception of greater risk for opportunities for infidelity. The risk was particularly associated with the employee's accommodation at the

pub in town which gives him access to the bar and the skimpies¹⁶ they have there. Well I couldn't stand it. I didn't know who he was with, didn't know when he was getting home. I couldn't get hold of him, all that sort of thing. So I think the social, they need to tame that in towns, I think. There needs to be curfews I think. I mean the wet messes have it anyway I think don't they, they're only open for a couple of hours? I haven't met one lady who's comfortable with it. With their husband sitting in a bar all night looking at boobs. It's just, there is nothing that can be done about it but I hated it and we would fight about it, because it's not, you can't, of course a man's gonna sit there and I'm one of those who just thinks it's gross and I'm not happy about it at all. I would really prefer you to go to the pub that doesn't have them, the beers the same, but everyone's relationship is different and their expectations of their partner is different but I don't think it's necessary, they're there to work, they can socialize, but not that way. It's hard enough to live the life without extra pressures like that.

¹⁶ Mining towns such as Kalgoorlie are "well known for its skimpies who serve drinks in 'costumes' or underwear and take the time to chat to their customers, often providing entertainment" (McLaren, 2008).

However, once the FIFO employee moved to site based accommodation the partner believed the risk had gone and it was no longer an issue between them.

A number of both FIFO employees and their partners discussed the importance of trust in a relationship to allow FIFO to work.

Every relationship I suppose is based on trust and to work away you've got to trust the other person one hundred percent. If you have doubt in your mind there's no point in doing it, if you don't trust them and you're sitting there all day wondering what they're doing, you can't work like that.

However, it was also acknowledged that trust can be an issue in a relationship regardless of employment type (McCarthy, Ginsberg & Cintron, 2008).

Leaving home

Despite being satisfied with the lifestyle a number of employees described their emotions related to leaving to go back to work for some, as depicted in Gallegos (2006) model there was a gradual withdrawal from the family and a sadness at having to leave; as one employee explained, *it gets to Sunday night and I get a bit down*, yet another said, *I hate the last night before I go back. I find I end up staying up until about midnight because it's like I don't want to go to bed because the sooner I go to bed the sooner I go to sleep, the sooner I wake up, the sooner I have to go back to work*, and similarly, *the last day we tend to bicker a bit because we know we're coming up to the hard work again and we get a little bit irritable*. Some partners also noticed this change in the FIFO employee's emotions just prior to departure, *usually by Wednesday morning or afternoon he is a bit depressed because he knows he has to go back to work and gets a bit, not snappy, but just not himself*.

On the other hand many partners described different types of emotions related to the imminent departure of their FIFO partner. There was evidence of mixed emotions, on the one hand sadness at the imminent departure, but also a type of eagerness to have the departure *over and done with* and to be able to settle into the "away" routine again, *I quite like it that there's nobody here to tell me what to do and what not to do. I am a lot freer to do whatever I like, to come and go*. Another partner described the impact of changing from a 2/1 to a 9/5 roster on such emotions, *with the 2 weeks on, towards the end of the week*

when she was at home she'd start getting on my nerves because I'd had so much time on my own to do things my way but now there's less time on my own so it's just better. There is evidence then that these times of "home and away" transitions were periods of mixed emotions for employees and their partners.

Physical challenges

Fatigue was a particular physical challenge described by both employees and partners. For employees, this fatigue was associated with the long hours (usually 12 hour shifts) of work while on site, and was common to both shift workers (i.e., those who worked a set number of day shifts and a set number of night shifts) and those who worked only day shift. For some employees such fatigue resulted in an ongoing *feeling of exhaustion* that when on site, could lead to a restricted participation in non-work activities, as they *lost the motivation for exercise due to being tired*, and did not participate in many of the available site-based social or educational activities, for example *they have a gym at the mine but you have to get motivated to use it, when you're working 13 or 14 hours you're stuffed*.

From the partners' perspective fatigue was more likely to be experienced by those partners with children, and in particular, those with young children when the FIFO employee was away on site. As described earlier this fatigue can impact on the negotiation between partners on the use of time when the employee was home. That is, while the employee was tired from working on site, the at home partner was tired from the period of sole parenting, and as such, both partners *wanted a break* during the employee's time at home. The types and success of strategies used to manage these issues varied between families and their particular circumstances. However, employees generally acknowledged the extra responsibilities their partner faced during the away time, *the day to day running of the family, the servicing of the cars, basically you become the husband as well, or the wife, whichever way it is, you're both parts*, and in acknowledgement some employees took over various extra household responsibilities when they were home, *I try to do all of the cooking, I make a concerted effort to give J (wife) a break, to me it's only fair because when I'm away I get my meals cooked for me, I get all the washing up done for me*. In acknowledgement of the extra responsibilities imposed on his partner while he was away,

one employee with very young children described *looking forward to going back to work to have a rest and get some unbroken sleep and have everything done for me.*

Both employees and partners described the impacts of their fatigue on their interactions at the time of the employees' return home. *When he comes home he is physically exhausted and it takes him I would say a good day to basically get up to speed.* These findings are similar to those presented in Gallegos' (2006) model¹⁷ in which the first twenty four hours following arrival home could present challenges for families to successfully manage the impact of individual fatigue on their reunion and time together, however couples and families in this study generally seemed aware of the issues and to have developed strategies that allowed them to successfully manage these times, for example one partner without children described,

I know I'm like trying to tell him everything as soon as he arrives and I know he doesn't listen and he doesn't like it and he gets angry and he's tired and all I want to do talk and stuff but the majority of the time I'm at work so it doesn't really matter. I pick him up and take him home and he sleeps and all day until I come home and then he's awake.

Those employees on a 5/2 roster had less time at home (2 days) to catch up on sleep as well as participate in home activities, and trying to negotiate this time was described as a challenge for both FIFO employees and their partners. These issues could be associated with the less than healthy score recorded by the Partners in the Away less than 6 days group on the Affectional Involvement subscale of the Family Assessment Device as reported in Chapter 5. The short period of time at home might make it more difficult for some to reconnect emotionally.

Community challenges

Some informants, both employees and partners, revealed challenges associated with integrating a FIFO lifestyle with living in their local communities. These challenges referred to community attitudes and community arrangements. This is in keeping with earlier research, as described in Chapter 3, which established the relationship between

¹⁷ As described in Chapter 3, p62.

access to community resources and support and how people manage the interface between their work and home lives (Lee, Duxbury & Higgins, 1994).

Community attitudes

There was evidence of the impact of community attitudes to and perceived lack of accurate knowledge of mining in general and FIFO in particular. Some informants described the impact of *uninformed and judgemental* attitudes regarding FIFO on themselves and their families. Such comments included those of family or local community members, as well as public comments by, for example, politicians in the press (e.g., Bowler, 2001; Loney, 2005). Most informants took what could be described as “a philosophical approach” to such statements, dismissing them as *irrelevant*.

Wherever you live or how you live, there are always going to be stresses and strains on a relationship. But I don't think you can blame the break up of marriages and things like that on the industry. I don't think it's right to blame it - I think it's up to the people to make it work one way or the other.

And in respect to the impacts of FIFO on regional areas one employee stated, *we don't have to populate every area now to claim this continent. I agree it is disastrous for small towns. For me FIFO is a better life, I find it a better life.*

However, some described how such statements influenced their ability and willingness to form relationships and links within their local communities and were more likely to want to form relationships with people who understood and accepted the lifestyle, *if you're feeling lonely it's no use going to talk to a neighbour because she's got no idea what you're feeling like, so to be able to talk to someone that you trust and who knows what's going on helps*. Those at home family members who rely on family and community support while their FIFO partner is away on site are particularly vulnerable to such attitudes (Sibbel & Kaczmarek, 2005).

Community arrangements

Many of our community arrangements are predicated on the majority of the community having traditional working hours of nine to five, five days per week, and as such, do not necessarily cater for, or are appropriate to those more than 50% of Australia's

employees who have “non-standard” working hours. Such community arrangements provided challenges for FIFO employees and their partners in areas such as availability of “out of hours” childcare, especially in emergency situations, and membership of for example, sporting and other community organisations. For example, participation in team sports or other social activities that required regular attendance on particular days was often difficult for employees when they were home on break as many sporting associations had strict rules regarding attendance at training sessions and matches that could not be met by FIFO employees. Furthermore, some employees were unwilling to commit *large chunks* of their time at home to participating in sporting teams, as one employee explained,

with working 14 days and seven days with regards footy it's your whole day gone, if I play with hockey it's only an hour and you can go but with footie you play your two hours or nearly two hours or an hour and a half or whatever it is and then half an hour before and half an hour afterwards, it's three or four hours and your whole day's gone so on two and one, I just can't do it.

Thus, informants to this study described a number of work-related, emotional, physical and community challenges associated with their particular experiences of the FIFO lifestyle.

Living FIFO: Meeting the Challenges

Despite the challenges associated with FIFO employment as described above, it appeared that FIFO employees and their families do not necessarily perceive they have greater challenges in their lives than do those who do not have FIFO employment, rather, the regular comings and goings result in some different issues to manage. Informants to this study described a number of strategies they implemented to successfully manage the challenges and stressors associated with the FIFO lifestyle and its impact on their wellbeing. There was also evidence of the uniqueness of each individual and family's experiences of the FIFO lifestyle, and the diversity of strategies they employ to successfully adapt to, cope with and manage it.

Doing FIFO for a good time, not necessarily a long time

Associated with the notion of informed choice, as described earlier in this chapter, was the length of time people planned to continue with FIFO employment. As displayed in Table 8 (Chapter 5, p. 92) there were differences in the number of years participants in the quantitative phase of this study indicated they intended to remain in FIFO employment. Some had a definite number of years they wanted to have FIFO employment and would only remain in FIFO employment for that time in order to meet particular personal, career or family goals. For example, some expressed their plan *to quit FIFO when we have kids because I don't want to miss out on any of that*, while others had certain financial goals in mind such as *saving up enough to start our own business so we can get out of mining or when we've paid off the mortgage so we're ahead*, or paying for children's secondary or tertiary education. Yet others were more open-ended with their FIFO intentions with no set time for wanting to stay in FIFO, and adopting a more "wait and see" attitude.

The differences between the wanted and expected years FIFO as shown in Tables 8 and 9 perhaps reflect the pragmatic attitude of many of the employees. That is, although they only wanted FIFO employment for a certain period of time, in reality many accepted that for any number of reasons the time could be longer than originally planned. This could be evidence of what earlier research referred to as the "golden handcuff" in which FIFO employees become so used to the lifestyle enabled by the remuneration that they remain in FIFO while really wanting to leave (Adams, 1991; Gillies, et al., 1997), as one employee stated,

with FIFO you get handsomely rewarded but you also lock your lifestyle, your lifestyle adapts to having money and you consequently end up carrying probably more debt than most and you're almost locked in then, you can't necessarily take a city based job because you simply can't afford to any more,

and yet another explained,

it's the hardest thing to walk away from that money because what do you do, where do you go, how do you earn \$150,000 in Perth, you just can't. How do you substitute that income?

For other employees there was acknowledgement that they would remain FIFO because the lifestyle suited them and they did not want to have to work in the city in a “nine to five” position, *I don't think I could come back and work full time. I don't think I could come back and live full-time. She has her way and I have mine.*

Maintaining relationships

Maintaining relationships with family, social networks and in the wider community was described as a particular FIFO related challenge for employees and their families. However, informants also described the opportunities afforded by FIFO to strengthen connections. This was related to their heightened awareness of the need to be aware of the potential impact of the lifestyle on relationships and to actively engage in strategies that could mitigate these effects.

We tend to find that if people want to see us we have to book ourselves weeks, months, shifts in advance we try to make a conscious effort to give one night of the weekend when he is home to ourselves I think that is important for us to have time on the weekends for just the 2 of us (. . .) we make a very conscious effort to do that and we always have in terms of trying to do every thing together.

For some couples, although the time apart could be difficult, there were also positive effects that served to strengthen relationships. For example, for some, the time apart allowed time for issues in a relationship to heal. Others described an increased sense of satisfaction with the quality of communication between them while they were apart. It seems that because they were restricted to phone calls and/or emails during this time, they attended more carefully to how they interacted. For others, the regular returns added a sense of re-discovery and renewal to the relationship,

I think it's made us stronger that he is away - our relationship's stronger and as individuals as well, we don't actually take each other for granted, I think because we have our other interests and then we come together and we can discuss what's happening.

Although they missed each other, some couples valued the time apart as an opportunity to pursue their individual interests or pursuits such as further study, while they

also readily engaged in shared pursuits when they were together. Some “at home” partners *enjoyed the quieter, more relaxed atmosphere* when their partner was away, the reduced amount of housework and the opportunities to make decisions on their own. As was also found by Reynolds (2004), partners in the current study valued that FIFO provided them with *the chance to be self-sufficient* which resulted in a sense of *becoming more resourceful and strong and independent*, and as a female partner with one child explained,

with a partner doing FIFO you have to be comfortable and confident in your own ability to deal with all manner of issues. You also have to like your own company but be able to work at maintaining outside friendships.

Roles and responsibilities

As described in the previous section, families implemented a variety of strategies to manage changing family roles and responsibilities depending on their particular circumstances, acknowledging that they *have to work hard to develop routines for raising children that are consistent*. However, the FIFO employee’s time at home also resulted in a sense of a *better opportunity to share the parenting because when he’s home he’s at home during the day and the night, and on weekdays and weekends*.

Interestingly, and in keeping with the notion of informed choice, some families described their FIFO situation in terms of comparisons with that of non-FIFO families, as though they were evaluating their situation. For example, it was acknowledged that all families, regardless of the type of parental employment, have to negotiate family roles and responsibilities, and that these change for all families as they move through different life stages. There was also an indication that the regular comings and goings of the FIFO employee resulted in a heightened awareness in FIFO families of the need to address these issues. Such awareness could allow families to put in place strategies that allow them to successfully adapt to the regular absences.

The relatively shorter rosters of the informants to this study, that is, 9/5 or 2/1 compared with longer rosters such as 4/1 or 6/1 could also impact on their ability to effectively manage family roles and responsibilities, *on the shorter rosters I find you have a more normal life, you know you can plan ok we can do this you can do that on his week*

off. The time apart was short enough for family members to remain generally in touch with and connected to each other and the family's everyday activities, *everyone will have their own unique experience but I think generally because rosters are getting a lot easier. . . we operate a 9 and 5 and an 8 and 6 roster and they are much more family friendly and at least you can get to your kid's soccer game every second week so that's easy*. These findings are in keeping with employees and partners preferred and current roster cycles as presented in Table 6. Only 1% preferred a roster cycle that included more than 3 weeks away on any one swing. Furthermore, these findings support those of Beach (1999) who reported the negative impacts longer rosters (i.e., 4/1) can have on family relationships.

Accessing resources and support

In addition to applying the abovementioned strategies to manage the lifestyle, FIFO employees and partners described their use of various family and community related resources depending on their particular circumstances and life stage. In particular, as mentioned earlier, near-by family and close friends were used by many partners for practical help such as regular and emergency childcare or transport to and from the airport, as well as emotional support and "adult company". The importance of such support was highlighted by the experiences of one family who for their first experience of FIFO were based in a regional centre far from family and friends. During a night-time medical emergency with one of the children, while the FIFO parent was away on site, the at-home parent was unable to contact her FIFO partner and was unable to find anyone to care for the older child while she took the very ill younger child to the hospital. Indeed, this experience resulted in the family moving to a capital city and seeking residential employment, although they did later return to FIFO employment but when the children were school age and they chose to be based in a capital city rather than in a regional centre. Whereas, another FIFO family living near extended family described the confidence they felt in their ability to manage such an emergency while the FIFO parent was away because of the proximity of the family and their willingness to help. This family believed FIFO employment had resulted in them having put in place various family emergency procedures which they believed they would not have instituted had they had non-FIFO employment.

However, there was also evidence that many partners preferred to be as self-reliant as possible and not to over-use their support resources, *mum and dad have raised us to be extremely independent so it's not as if we have to lean on anybody to get by, and I'm not the kind of person who wants to talk about their problems with other people, that's just me, I just grin and bear it and cope on my own and that's basically what I do.*

As discussed earlier, many valued the increasing independence and sense of self-reliance often resulting from the FIFO lifestyle. Others acknowledged the support around them but felt such support was at times less than perfect because *I have support, but I don't have support from people who know what it feels like or who really know what the scenario is...*

Similar to the non-FIFO community, some FIFO employees and partners were members of various community groups such as mothers' groups, play groups, sporting clubs and other social networks and generally valued the relationships formed through these memberships. Some valued the opportunities such memberships provided to meet other FIFO people with whom they could share their experiences *without having to explain anything and justify why we're doing fly-in/fly-out.* However, employees acknowledged the difficulties their regular absences created for being members of sporting teams and some chose sporting activities such as golf or fishing that fitted in better with regular absences, *with 2 weeks away and you try to fit into a footy team it doesn't work and training with 12 hour shifts.*

Meeting the expectations of FIFO living

For many of the FIFO employees and partners in this study FIFO living was how they expected it to be, however, there was also evidence of variation in the match between the expectations of the FIFO lifestyle and the lived experiences of some FIFO employees and their partners in this study and their adaptation to the lifestyle. These differences were not necessarily described in terms of being more positive or negative in their impacts but rather as a form of self-discovery. Interestingly, this was the case both for some who were new to FIFO and also for others who had moved in and out of FIFO employment over a number of years. For example, one younger employee who had less than 12 months FIFO experience explained,

I just thought I would sort of kinda fall into the routine of it, that the lifestyle wouldn't really phase me after a little while, but in some regards it has, I kinda just go through the motions but the more I do it the more I know I couldn't do it long term it's just too much.

He explained this mismatch in terms of, *being away you do start to learn a bit about yourself*. Similarly, a young partner said, *I thought I would get more used to it and I thought it would be easier with B (partner) going away it and the time would get quicker but it hasn't really, it's sort of stayed the same.*

She thought it was good because she could live her life and then on the week off we can spend life together sort of thing and then she can toddle off, but now I don't think she likes it so much because especially going back to 2 and 1

For those who had greater experience of FIFO the disparity between expectations and lived experience was related to factors such as moving through life stages, for example following the addition of children in the family, or a change in employment circumstances such as a change in roster from for example 2/1 to 9/5.

I didn't really know what to expect and didn't know anything about the FIFO lifestyle and it wasn't sort of until maybe 12 months in that I started to think well maybe this is a bit more permanent, well not permanent but do you know what I mean, but a bit more serious than what we had originally thought and it was about just after 12 months in when S got made redundant so he was home for a month in between jobs and that month was very difficult for me because of I was used to having my own space and my own time and him being home for a month was "what are you doing?", "Where are you, who are you with?" and that drove me crazy

As described in Chapter 3, Watts' (2004) model of adaptation to FIFO proposes a four stage continuum that FIFO employees and their partners are likely to experience over a period of up to six months after they commence FIFO employment. According to the model during the final stage of adaptation people either (1) accept and enjoy the lifestyle,

the girls that I work with can't quite get their heads around the fact that when he goes off to work and I basically stay here they have a real issue with the fact that I'm happy for him to go and work and then come back

(2) accept and make the best of the situation,

It's hard work, a different kind of hard work but you all make sacrifices in life and by sacrificing our time together we get the financial reward

(3) accept it in the short term but limit the time they plan to do it,

the more I do it the more I know I couldn't do it long term it's just too much

or (4) accept but passively reject FIFO.

I just thought I would sort of kinda fall into the routine of it the lifestyle and wouldn't really phase me after a little while but in some regards it has I kinda just go through the motions

The present results provide some support for Watts' (2004) model as there was evidence of participants, both FIFO employees and partners, who conformed to each of Watts' stages. However, they also suggest an extension to the model in that FIFO employees and their partners do not necessarily remain locked into that particular adaptive stage for the duration of their FIFO experience. Rather, as their life circumstances change so might their adaptation to the lifestyle be moderated by these changes. Thus, a childless couple might accept and enjoy the lifestyle as described in Stage 1 but plan to limit the time they are willing to do FIFO once they have children, Stage 3. Similarly, a partner who is in Stage 4 might adapt to the lifestyle differently if he or she for example takes employment outside of the home.

Managing the time away

According to Gallegos' (2006) model FIFO employees can experience various emotions during their time and away cycles. Although the experiences of all participants in the current study did not necessarily concur with each of the aspects of Gallegos' model, they did acknowledge the impacts of the time away and employed a number of personal strategies to help them during these times. Such strategies depended on individual

circumstances and included passive acceptance as well as active coping strategies. For example, as these employees explained:

when I'm at camp the first day I am there I give myself the coach's talk where I say to myself, just switch off, don't think about it just I tell myself to zone out for the next 2 weeks and just don't count the days, that's the main thing I do, is not count the days and just not think about it. If I start to think about it I'll stop myself, I'll think to myself no don't think about it I just whatever I'm doing and I find that works a lot better for me. When I first went up there I counted the days every day, counted the hours and it would just obviously it was the same amount of time but it was a lot harder for me and then the same things when I'm on break I don't count the days when I'm on break cos if you get to the Monday and you start thinking oh I've got to go to work in 3 days it just ruins your break so I play little tricks on myself like that.

or

2 and 1 it's too long by about ten days you've had enough – it's time to come home – 8 and 6 is good – you can work straight through – the end is in sight from the beginning – you know you'll be home next week –

or

Most people use fish and chips – Friday night is fish and chips at every mine site you go to and so if you've done one you've only got one to go but it depends on what day out you fly out – you see we fly out on a Thursday so your fish and chips is just the day after so we say you've still got 6 to go so then you start counting down to your fish and chips, second fish and chips to the Sunday and then you start counting down from the Sunday. But even on the first night in you say “shit – only got 13 to go we're mowing them down

Similarly, the partners at home also used various strategies to manage the time the FIFO employee was away.

I'm a bit hopeless like, I can't sort of stir myself into action so I generally just kind of just get through it, go to work, come home. I try not to really think about it

OR

I do my darndest not to wish my life away and I think by looking at the date and thinking oh goodie you're coming home to me I think that's a bit of wishing your life away and I try not to do it and I try not to think Oh God, he's coming home or Oh goodie, I've only got 4 days to go, I try not to but it doesn't always work though

Those families with children also employed various strategies to manage the time away depending on their particular circumstances. Some families had two separate routines, one for when the FIFO employee was home and yet another when they were away, while other families particularly made the effort to maintain a regular and constant routine regardless of whether the FIFO parent was home or away. Similarly, some used count down techniques for the children to know when their FIFO parent was due home, whereas others made less of the comings and goings in an effort to “normalise” the absences. As one partner explained,

I'm a bit of a routine freak anyway so we've got Mondays we do this and Tuesdays we do that and so but it's pretty good that when he gets home the routine stays the same

and yet another,

When he was doing the 2 weeks away and 1 week home I'd have 2 terrible weeks out of 3 and it was purely because when G (FIFO husband) was home the routine was gone, my routine and I had to try and continue on because I had my own business so I'd continue on and so I'd still be doing my hours work and the kids would still be going to after school care and G it was obviously his week off so he wouldn't be doing anything AT ALL so the kids got thrown out of wack and I'd get thrown out of wack and then he would leave and it would take me a week to get the kids back into line with things rolling along quite nicely

and then we'd have that great week where the kids were back into their routine, quite happy to do what mum says, weren't vying one parent against the other and I have that brilliant week and then G comes back home and everything got thrown up in the air. That was probably the first maybe 5 years of him working away. Now it's better. As I've said to my friends and my clients it's taken me 7 years to get my act together with G and with the kids.

Thus, while both employees and their partners employed various strategies to manage the time away, the range of emotions they experience are more diverse than those in Gallegos model, perhaps reflecting the greater diversity of the participants in this study. The factors associated with this diversity and their impacts on the experiences of FIFO employees and their partners are discussed in the following sections.

Living FIFO: Factors that Influence the Experiences of FIFO Employees and their Partners

In addition to describing the experiences of FIFO employees and their partners, including the benefits and challenges of the lifestyle, the preceding section highlighted the diversity of experiences of FIFO. That is, FIFO employees and their partners are a heterogeneous group and the ways in which they manage and adapt to the FIFO lifestyle are unique to their particular circumstances, and as such, are dependent on the interactions of a number of factors that are related to their individual/ family, community and workplace systems. The interactions between these factors influence the wellbeing of FIFO employees and their partners at the individual, relationship and family levels. These factors are summarised in Table 24 and their influence on employee and partner wellbeing is described in the following section.

Table 24

Some factors that influence the experiences of FIFO employees and their partners

Workplace Factors

- Size, profitability, expected life of mine
- Roster options
- Job type
- Working hours and shift arrangements
- Contractor or principal employer
- Location of accommodation in town or on site
- Standard of accommodation facilities
- Provision of psychosocial support
- Individual manager/supervisor practices
- Employer philosophy and commitment to work practices relating to work/family interface
- Availability of communication

Personal Factors

- Age
- Gender
- Single or partnered
- Expectations, understandings and commitment of employee and partner
- Reasons for taking/continuing FIFO employment
- Individual temperament and coping styles
- Presence of pre-existing problems - personal or relationship
- Access to and willingness to accept external support
- Stage in lifecycle - different stresses and impacts for different stages depending on gender and family status
- Presence and age of children
- Employment status of partner
- Value placed on work/home roles

Community Factors

- Community attitudes to FIFO
 - Community support facilities and networks
 - Community knowledge of FIFO
-

The factors identified across the categories in Table 24 above include psychosocial aspects such as expectations and understandings, attitudes and values, temperament and coping styles, life stage and roles as well as aspects such as physical and material resources and options. As highlighted in the previous section, it is the interaction of these factors that determine people's experiences of FIFO employment and the associated lifestyle. For example, maintaining communication was identified as a salient factor by both employees and partners in contributing to individual and relationship wellbeing. An employee's access to communication facilities while onsite could be dependent on his job type (certain jobs have access to phones, the internet and email while others do not), the profitability of the mine (more profitable mines are more likely to provide better facilities), location of the mine (those in or near a town are more likely to have mobile phone access), and shift arrangements (communication can be more difficult for those on certain shifts). Personal factors such as the presence and age of children, the partner's coping style or their employment status can also influence the way in which communication is managed while the employee is home and away. For example, for those employees with younger children might need access at different times and regularity than those without children, or a partner's successful adaptation to the FIFO lifestyle might depend on being able to have daily phone contact with their FIFO partner. Thus the salience of the influence of individual factors is not static but can depend on the particular circumstances at a particular time.

Living FIFO: How the Factors Influence the Wellbeing of FIFO Employees and their Partners

The following section presents the theoretical scheme of how the above-mentioned work-related, individual, family and community factors impact on the wellbeing of FIFO employees and their partners. This scheme is considered in light of earlier FIFO research reviewed in Chapter 3, and is discussed in terms of the work family interface models reviewed in Chapter 2, in particular the role scarcity model (Greenhaus & Beutell, 1985) and work-family facilitation (Grandey & Cropanzano, 1999). The scheme further

integrates and thus explicates the findings of the qualitative and quantitative phases of the study.

As discussed in Chapter 3, since FIFO was introduced into the offshore oil industry in the 1950s and the land-based Australian mining industry during the late 1980s, research studies and public discussion have conceptualized the lifestyle as non-normal, and as exposing individuals and families to greater stressors associated with work-related absence, and pre-supposing detrimental effects on wellbeing at the individual, relational and community levels (e.g., Bowler, 2001; Gent, 2004; Pollard, 1990; Sibbel, 2001; Watts, 2004). However, the findings from the quantitative phase of the current study challenge these conceptions, suggesting instead that this group of FIFO employees and their partners do not differ significantly from the general population in terms of their psychological wellbeing, relationship satisfaction and perceptions of family function. In particular, the quantitative phase of this study revealed that the FIFO employees and their partners reported healthy levels of relationship satisfaction, cohesion, consensus and affection in their relationships as determined by the Dyadic Assessment Scale (Spanier, 2001). Similarly, with respect to their families, the FIFO employees and their partners in this study reported healthy levels of family functioning, as assessed by the Family Assessment Device (Epstein, Baldwin & Bishop, 1983), in the areas of resolving instrumental and affective issues, achieving clear and affective communication, effectively allocating and undertaking roles for everyday living within the family, family members maintaining interest in and expressing affection for each other, establishing and sustaining appropriate behaviours and successfully accomplishing everyday tasks. These findings may be understood in terms of the preceding discussion of the experiences of FIFO employees and their partners; that access to the increased material (e.g., generous income) and psychosocial (e.g., separation between work and home lives, extended periods of time at home, access to employment, educational and social opportunities for family members) resources afforded by FIFO employment, and described earlier, positively contribute to relationship wellbeing and family functioning.

Moreover, as suggested by some earlier studies (e.g., Gallegos, 2006; Reynolds, 2004; Taylor, 2006) particular aspects of FIFO living that have previously been regarded

as risks to healthy relationships and family functioning for FIFO employees and their families may instead provide further resources for FIFO couples and families. For example, although communication was described as a challenge by FIFO employees and their partners, they also exhibited a heightened awareness of these issues when they described the ways in which they addressed this challenge. Similarly, the time apart has been described as a risk factor for relationship wellbeing and family function, however, both FIFO employees and their partners displayed depth of understanding of the issues when they explained strategies they implemented and ways in which the time apart strengthened them as individuals, couples and families. Likewise, FIFO couples with children were aware of the way in which their FIFO lifestyle might impact on achieving consistency in parenting in the household and had effective strategies to ensure they could achieve their individual family's goals. These strategies often included an acceptance that *it was not always going to be perfect*. It could be the heightened awareness of these and similar issues for FIFO couples and families might result in them specifically focussing on developing and implementing strategies that has contributed to their healthy function in these areas. Thus, this heightened awareness may have turned potential risk factors into protective factors for these FIFO individuals and their families and increased their family resources.¹⁸

While the qualitative findings described in the preceding section provide evidence that although FIFO employees and their partners face a number of stressors and challenges associated with the lifestyle, they describe differently focused rather than necessarily greater stressors and challenges than those of the wider population. Therefore, this thesis proposes that the informed decision making by this group, their heightened awareness of various individual and family issues, and their access to and use of various material and psychosocial resources and support diminishes the likelihood of tension between work and

¹⁸ It is acknowledged that the majority of participants (86.7%) in this study were on rosters that had two or fewer weeks away on site on any swing (see Table 5). These shorter times away might impact on the ease of addressing issues such as maintaining emotional attachments, allocating household roles, implementing consistent parenting practices and generally achieving a sense of cohesion within the household. As such, it is suggested that these findings may not be the case for those on rosters which require a longer time away from home.

home lives and thus facilitates their wellbeing at the individual, relationship and family levels. This thesis also proposes that individual experiences of the FIFO lifestyle are moderated by various work, personal and community factors as listed in Table 24.

The review of the general work family interface literature in Chapter 2 established that the competing demands of work and family roles can impact negatively on the psychological wellbeing of individual family members and on family and spousal relationships as a whole. As individuals attempt to integrate their work and home lives their perceptions of having insufficient resources (e.g., time or emotional resources) to successfully fulfil their work, family and community commitments can result for example, in job and family dissatisfaction, depression and life stress (Kinnunen & Mauno, 1998; Squire & Tilly, 2007). When viewed in terms of the abovementioned work-family interference literature and in particular role strain theory (e.g., Frone, Russell & Cooper, 1992; Greenhaus & Beutell, 1985), FIFO employment with its practices of regular absence from home associated with long working hours, and often involving shift work appeared to have the potential to create such conflict between work and home lives for both FIFO employees and their partners that would impact negatively on individual, family wellbeing, in particular creating work and home related time pressures (Baltes & Heydens-Gahir, 2003; Baxter et al., 2007; Byron, 2005).

However, despite being exposed to these potentially negative work related pressures, the FIFO employees and partners in this study reported healthy levels of individual and family functioning, similar levels of wellbeing to that of the wider population, and generally reported successfully adapting to and coping with the lifestyle. These findings are in contrast to those proposed by the work-family interference literature and demonstrate the limitations of role strain theory (Frone, Russell & Cooper, 1992; Greenhaus & Beutell, 1985) in understanding the interactions between work and home lives for FIFO employees and their families.

As reviewed in Chapter 2 the role scarcity model proposed that work-home conflict can arise when an individual has to perform multiple roles as a worker, spouse, parent and community member, the demands of which require the commitment of finite time, psychological and other resources (Greenhaus & Beutall, 1985). Work-home conflict

results from a stressful appraisal that the available resources are insufficient to meet the competing demands of each of the roles (Voydanoff, 2004). Antecedents of such conflict included time and strain based pressures such as the number of hours at work, inflexible working hours and shift work, household duties and work-related stress. Recent reviews and meta-analyses of the work-family literature (e.g., Allen, Herst, Bruck & Sutton; Ford, Heinen & Langkamer, 2007; Kossek & Ozeki, 1998; Mesmer-Magnus & Viswesvaran, 2005) concluded that a negative relationship frequently exists between work-family conflict and various indicators of work, family and life satisfaction and wellbeing. However, this was not the case for FIFO employees and their families despite their exposure to various risk factors for work family conflict such as employment related absence, inflexible working hours and shift work. Rather, this thesis proposes that these risk factors might serve in some way as protective factors. It may be the case that the separation between work lives and home lives created by FIFO employment (i.e., the regular work-related absences) together with the good remuneration can facilitate access to psychosocial and material resources for individuals and families which in turn reduce role demands and thus benefit relationships and wellbeing.

The findings from the qualitative and quantitative phases of the current FIFO study can be better understood in terms of the emerging field of work-family facilitation in which work and home lives are viewed as interdependent and complementary, where involvement in one domain can beneficially influence functioning in the other domain, rather than being an inevitable source of stress and strain (Hill et al., 2007; Werbel & Walter, 2002). Work-family facilitation proposes that the personal, material, social and psychological resources associated with one role can facilitate performance in or reduce the demands of the other role, or generate additional resources (Grandey & Cropanzano, 1999; Hobfoll, 2002; Voydanoff, 2004b). Facilitation has been positively associated with improved physical and psychological and relational wellbeing (Grzywacz, 2000; Hammer et al., 2005). Moreover, it suggests these interactions between the work and home domains are influenced by various moderating variables (e.g., gender, age, life stage, job characteristics), and focuses on systemic consequences that take place at the individual, family and community levels (Grandey & Cropanzano; O'Driscoll, Brough & Kalliath, 2006; Voydanoff, 2008).

“Facilitation is a form of synergy in which the resources in one role enhance or make easier the participation in another role and may occur via mood, values, skills and behaviours. . . and can be bi-directional” (Allis & O’Driscoll, 2008, p. 276). Thus the participation in one domain is facilitated by participation in the other domain (Frone, 2003).

In keeping with the notion of work-family facilitation it is proposed that the separation between work and home lives that results from the regular work related absences of FIFO employees beneficially influences functioning in both domains, rather than being an inevitable source of stress and strain (Hill et al., 2007; Werbel & Walter, 2002). The physical and temporal separation between work and home lives imposed by FIFO employment allows employees to fully focus on each domain and thus minimise interference between the two. Both the employees and partners in this study described their satisfaction with this separation which allowed the employee to fully focus on whichever domain they were in at the particular time, and thus minimising role strain. The separate “chunks of time” at work and at home allowed them to fulfil their role responsibilities in each domain with minimum interference from the other domain, and thus minimise time strain and its negative impacts on their individual and relational wellbeing. This separation might not only minimise role strain effects, but also have a beneficial impact on wellbeing in that it removes the perception of having to try and “juggle” or “balance” work and home lives which can be a source of conflict between the two domains (Greenhaus et al., 2003; Hammer et al., 2005).

The participation in multiple roles at home and work might also buffer individuals from any negative experiences in one particular role (Barnett & Hyde, 2001). Rather than depleting resources, the opportunities provided by FIFO employment for employees to successfully complete both home or work roles offers multiple sources for satisfaction, thus expanding psychological resources (Ruderman et al., 2002). The separation of work and home lives offered by FIFO employment facilitates high levels of psychological involvement in each domain. Psychological involvement refers to the level of engagement an individual has in a particular domain (Allis & O’Driscoll, 2008; Greenhaus, et al., 2003), and high nonwork involvement has been positively associated with facilitation in

the work domain (Graves, Ohlott & Ruderman, 2007; Kirchmeyer, 1995), which in turn has been linked to greater individual and family wellbeing (Allis & O'Driscoll). The time offered by FIFO employment for employees to actively be involved in each domain's activities may create synergies such as satisfaction and psychological energy which carry over into the other domain (Grzywacz, 2000; Voydanoff, 2004). Such synergy refers to both energy and relaxation obtained in one domain that can benefit the other domain (Wayne et al., 2004).

Similarly, the separation between work and home for FIFO employees might also serve to protect them from psychological conflict in which preoccupation with one role prevents engagement with the other role (Carlson & Frone, 2003; Greenhaus, 1988). The physical and temporal separation between work and home lives facilitates focused participation in each domain, allowing them to fulfil their roles in each domain (Frone, Yardley, & Markel, 1997). Thus, FIFO employees experience positive gains in both domains. In their model of work home facilitation, Wayne et al. (2007) proposed that individuals obtain resources from both home and work roles, and that improved system functioning or facilitation occurs when gains from one domain (i.e., work or family) are applied, maintained or supported in the other domain (i.e., family or work). The opportunity for FIFO employees to successfully fulfil their work and home roles can provide them with psychological resources that improve their participation in the other role (Ruderman et al., 2002; van Steenbergen et al., 2007). Thus, there is a flow-on effect to partners and families who benefit from the improved participation in both roles, but in particular in the home role. The resources associated with FIFO employment such as good income, access to educational, health and other facilities might facilitate the performance in, reduce the demands of, or generate additional resources for, individual and family roles, thus reducing role strain and contributing to their individual, relationship and family wellbeing (Grandey & Cropanzano, 1999; Hobfoll, 2002; Voydanoff, 2004b). In particular, for FIFO employees there is the benefit from knowing they are able to fulfil their career/job aspirations and achieve a generous income while at the same time their partners and families have access to the resources necessary to fulfil their educational, social, career and other needs. Similarly, for partners there is the benefit of knowing the

FIFO employees are able to fulfil their work-related aspirations while at the same time they (the partners) and the family have access to the resources (for example, job opportunities, educational facilities or social networks) to fulfil their needs. For example, the financial benefit and suburban home location afforded by FIFO employment allowed one family to fulfil their desire for the partner to be a “stay-at-home mum”, and for the children to have regular interaction with their extended family and to attend their schools of choice, thus increasing family psychosocial resources.

The role of moderating variables

Models of work-family facilitation also propose that the interactions between the work and home domains are influenced by various moderating variables (e.g., gender, age, life stage, job characteristics) (Grandey & Cropanzano; O’Driscoll, Brough & Kalliath, 2006; Voydanoff, 2008). It is evident from the previous section detailing the experiences of FIFO employees and partners that there is great diversity in how people adapt to, cope with and live the FIFO lifestyle. This diversity in FIFO experiences can be understood in terms of the interaction of the moderating variables in the work, personal and community domains as listed in Table 24. For example, work-site conditions such as the employee’s job type might impact on the roster and/or the availability of communication between site and home which in turn can impact on maintaining family relationships. Similarly, as described earlier, personal factors such as the presence and age of children or whether the partner has employment outside of the family home can moderate the experiences of the partner and the family both while the FIFO employee is home and away on site. The partner’s willingness to access available support can also be a factor. The qualitative data also provided evidence of the moderating role of community factors such as community attitudes and availability of community resources. There was also evidence of the role of moderating variables in the “informed decision” making undertaken by FIFO employees and their partners. For example, a couple might choose to leave FIFO employment if the employer changed their roster from their preferred shorter (e.g., 8/6) arrangement to one that was perceived as too long (2/1) for their relationship to cope with. As mentioned in the preceding section, and as found in earlier studies (e.g., Beach, 1999) the roster can impact on relationships and family functioning in a number of ways. Similarly, life stage can

impact on FIFO decision making, for example, a couple might choose to undertake FIFO employment once their children have grown and left home, and the partner is able to have employment outside of the home thus accessing social resources. Further research is warranted to better understand the moderating processes of these variables.

Current employment practices and conditions

The preceding section described how the findings from the qualitative and quantitative phases of the current FIFO study can be understood in terms of work-family facilitation. This final section posits the contribution of current employment practices and conditions to the wellbeing of FIFO employees and their families.

As described in Chapter 1, FIFO is one of a diversity of non-standard working hours that have become more common place in Western Australia. Earlier research has been predicated on FIFO being a risk factor as FIFO employees and their families may perceive their chosen lifestyle as just one of this diversity of working arrangements that are currently available and as such, not “out of the norm”. Rather, it is other sections of community (e.g., see Bowler, 2001) who perceive it as non-normal, and thus having the potential to negatively impact on the wellbeing of FIFO employees and their families. Furthermore, data for this project was collected when Western Australia was experiencing low unemployment (approximately 3.4%) with an accompanying rise in wages and salaries (ABS, 2009). This was prior to the global financial crisis of 2008-2009. Consequently people had more overall employment options, and thus had more opportunities to reject FIFO employment if they felt it did not suit them or their families, thus contributing to the notion of “informed choice”. The salaries and wages being offered for non-FIFO employment both within and without the Resources sector also provided people with a greater range of options. Consequently, those who did not adapt to the lifestyle might be more willing to leave FIFO if they found it did not suit them or their families. This is in keeping with Storey and Shrimpton’s (1991b) suggestion that there is evidence of some degree of self-selection in FIFO communities. That is, many people who realise they would not cope with the lifestyle never apply to work in such an environment, while those who find it unsatisfactory leave as quickly as possible after finding they do not adapt. Those who remain adjust, adapt or learn to cope with the lifestyle. Apart from Watts’

(2004) work there has to date been little research specifically with those who exit FIFO employment to better understand these issues.

Conclusion

It is concluded from the preceding integration of the findings from the qualitative and quantitative phases of this study that the separation between work lives and home lives created by FIFO employment (i.e., the regular work-related absences) together with the good remuneration can facilitate access to psychosocial and material resources for individuals and families which in turn reduce role demands and thus benefit relationships and wellbeing. In addition, individual and family experiences of FIFO are moderated by a number of variables such as age, gender and life stage. Thus work and home lives can be viewed as interdependent and complementary, where involvement in one domain beneficially influences functioning in the other domain, rather than being an inevitable source of stress and strain (Hill, et al., 2007; Werbel & Walter, 2002).

Chapter 8

Future Directions and Final Words

This chapter discusses the implications of the findings and presents a number of recommendations for supporting FIFO employees and their partners at the legislative, company, community and family levels. The strengths and limitations of the current study are discussed incorporating suggestions for future research and concluding statement are made.

Chapter 8

Future Directions and Final Words

Introduction

The previous chapter presented the findings and interpretations of the qualitative phase of the study. The emergent theoretical scheme was presented and discussed in light of existing literature and the findings from the quantitative phase.

This chapter presents the contributions of the current study to theory, knowledge and practice. The implications of the findings are discussed and a number of recommendations for supporting FIFO employees and their partners at the legislative, corporate, community and family levels (qualitative research question 4) are proposed. Finally the strengths and limitations of the current study are examined incorporating suggestions for future research.

Contributions of the Study to Work Life Home Life Interface Theory

This study contributes to the broad theoretical understandings of the interface between work and home lives and the resulting impacts on individual, relational and family wellbeing. In particular, it highlights the limitations of role strain theory in understanding the impacts of regular employment related absence on the interface between work and home lives generally, and specifically for FIFO employees and their families. Furthermore, the theoretical scheme proposed by this study in which the separation between work lives and home lives created by FIFO employment (i.e., the regular work-related absences), together with the good remuneration, heightened awareness of personal, relationship and family issues, in conjunction with informed decision-making, can facilitate access to psychosocial and material resources for individuals and families, thus benefiting relationships and wellbeing. It extends the field of work-home facilitation and establishes the validity of this approach in understanding the impacts of regular employment related absence on the interface between work and home lives generally and for FIFO employees and their families specifically.

Contribution of the Study to FIFO Theory and Understandings

Although FIFO has become increasingly common in the mining industry over the past 20 years, to date there had been only a small number of Australian research studies on

the psychosocial impacts of this employment practice, and consequently our understandings were limited (CMEWA, 2005; Reynolds, 2004). The present study responded to a need expressed by government agencies, non-government agencies, the mining industry and the wider community for more research in this area (CMEWA; Lambert, 2001; Watts, 2004) by investigating the psychological, relational and family wellbeing and the factors that contribute to this wellbeing of a group of FIFO employees and their partners at various life stages.

The findings from this study extend our understandings of the impacts of FIFO employment specifically on the wellbeing of Western Australian land-based mining FIFO employees and their partners and family systems. In particular, it established that this group of FIFO employees and partners report similar levels of psychological wellbeing, relationship satisfaction and perceptions of family function to those of the general Australian population, thus challenging the presumption of FIFO as a greater risk factor than non-FIFO employment for individual and family dysfunction. Moreover, it revealed that there were no statistically significant differences between the scores of the two groups (i.e., FIFO employees and partners) on any of these measures and that there were no significant differences when data were analysed according to family type or profile of absence, thus extending and partially supporting findings of earlier Australian FIFO research (e.g., Gent, 2004; Keown, 2006; Reynolds, 2004; Taylor, 2006), although some roster impacts on family functioning were found supporting and extending Sibbel (2001). In particular, the comparison of the employee and partner scores on the various measures of wellbeing provides new and unique knowledge of the impacts of FIFO employment.

This study also identified the diversity of experiences of FIFO employees and their families and determined various personal, work and community related factors that moderate these individual experiences. Significantly, the theoretical scheme proposed by this study provides a new understanding of the impacts of a FIFO lifestyle and how individuals and families adapt to and manage these impacts from those proposed by earlier FIFO related research. In particular, that the separation between work lives and home lives created by FIFO employment, together with the good remuneration, heightened awareness of personal, relationship and family issues, in conjunction with informed decision-making,

can facilitate access to increased psychosocial and material resources for individuals and families benefitting individual and relational wellbeing.

The understandings provided by the theoretical scheme resulting from this study offer a basis on which employers and other policy makers could develop more responsive policies and instigate strategies to further support and strengthen these FIFO employees and their families. Supportive employee and family policies have been shown to result in healthier families and communities, higher productivity and safety, lower absenteeism, lower staff turnover and greater organisational commitment (Behson, 2002; Boles, Howard & Donofrio, 2001; Bourg & Segal, 1999). Furthermore, the results of this study should help to dispel the misinformation in the community with respect to the impacts of FIFO on families and perhaps facilitate more cohesive communities. Western Australia arguably has the highest proportion of FIFO employees per head of population in the world. More broadly, the findings from this study could contribute to the development of better informed company and social policy in the wider areas of the work/family interface and non-standard working arrangements (CMEWA, 2005).

Implications of the Model in Supporting FIFO Employees and Partners at the Legislative, Corporate, Community and Family Levels.

In response to qualitative research question 4 (What are the implications at the legislative, company, community and family levels in supporting FIFO employees and their partners?) the implications from this study's findings have resulted in the following recommendations at the government, corporate, community and individual/family levels for improving the experiences, and hence the psychosocial wellbeing, of FIFO employees and their families. These recommendations are not intended as an exhaustive list, rather, they have been formulated from the particular findings from and challenges identified in this study.

Individual and family implications

The current study revealed the salience of the notion of "informed choice" in FIFO employees and families successful adaption to the FIFO lifestyle. However, there was also evidence that the FIFO lifestyle could negatively impact on the wellbeing of those family members who did not perceive they had such choice. Moreover, the findings demonstrated

that the appropriateness of the FIFO lifestyle for individuals and employees can change across the lifespan depending on their needs at a particular time. These findings suggest a number of FIFO-related processes individuals and families could implement to ensure their ongoing access to psychosocial resources appropriate to their particular needs at any time in their lifespan, and thus contributing to their individual, relational and family wellbeing. In particular, prior to accepting FIFO employment individuals and families should carefully consider the potential impacts of the lifestyle in both the long and short term on themselves and their families. Although the comparatively high incomes offered by FIFO employers add to employees' material resources, the impact of regular absence on relationships and family functioning also needs to be considered. Any decision to undertake FIFO employment should also include an "escape clause" that details the conditions under which it would be considered that FIFO was no longer a viable employment option as a result of negative impacts on individual and/or family wellbeing. Similarly, it is suggested that those individuals and families already in FIFO employment implement a system of regular appraisals that will allow them to assess how they and their family members are coping with the lifestyle, to discuss options for better managing the lifestyle and to consider the benefits and financial implications of continuing with or discontinuing FIFO employment. It is suggested that both individuals and families establish an "escape clause" that details the circumstances under which FIFO employment is no longer an appropriate option and under which they would be willing to consider alternate employment options. Such strategies could contribute to the continuing wellbeing of FIFO employees and their families.

Community implications

The current study revealed two community based challenges associated with integrating a FIFO lifestyle with living in local communities, namely community attitudes and community arrangements. There was evidence that the wellbeing of FIFO employees and their families depends in part on their access to appropriate psychosocial resources, some of which are located in the communities in which they reside. However there was also evidence that some FIFO employees and their families felt isolated from the communities in which they lived as a result of community ignorance and understanding of

employment in the resources sector in general, and FIFO employment in particular, and resulting in reluctance by some FIFO families to access the resources that were available. Similarly, many community activities and programmes are predicated on the traditional five day working week, effectively excluding those who work non-standard working hours from many of their events. These findings imply a need to educate communities about the practical impacts of FIFO and the ways in which FIFO individuals and families and others who have non-standard working hours can be better catered for and included in their communities. The number of FIFO workers and their families residing in Perth's suburbs has increased substantially during recent years (Price, 2008) and as such local governments and land developers have a responsibility to be informed about the particular impacts of FIFO employment for individuals, families and communities. It is suggested that community organisations, for example local sporting associations, try to arrange their activities to take into account the rosters of FIFO workers and other shift workers. As stated earlier, more than fifty percent of the current workforce has non-standard working hours and therefore may be precluded from participating in community activities that are predicated on the standard nine to five work arrangements. More flexible community arrangements could not only give access to a greater pool of potential participants, but could also lead to more inclusive communities which provide greater community support and cohesion (Witten, Penney, Faalau & Jensen, 2006).

Corporate implications

Although the study revealed the positive impacts of the separation between home and work lives provided by FIFO employment, such division can also allow employers to more easily neglect or ignore the impacts FIFO employment has on the families of FIFO employees and on the communities in which they live. However, it must also be acknowledged that employers have addressed some of the factors described earlier in Table 24 that impact on the way FIFO employees and their families experience the lifestyle. For example, in addition to the longer rosters such as 2/1, employees have the option of shorter roster arrangements with nine days away and five days home, or eight days away and six days home becoming more common and some companies even considering part-time FIFO employment (CMEWA, 2008b). Others provide flexible roster arrangements to cater for

family emergencies. Furthermore, companies are more likely to offer various forms of psychosocial support for employees and their families. For example, confidential Employee Assistance Program (EAP) counseling for employees and immediate family members; special leave provisions; family site visits; and email and internet access in the accommodation villages on site (CMEWA, 2008a, 2008b).

Technological developments in, for example, the internet and mobile phone equipment, have resulted in ongoing improvement in communication and other facilities for FIFO employees and their families. However, there are no whole-of-industry standards that guide or mandate the extent to which individual companies implement such support practices. As discussed in the previous chapter, the degree of support provided by companies to the FIFO employees and their families is dependent on various company related factors such as size, profitability and location of the mine, individual manager/supervisor practices and each company's philosophy and commitment to work practices relating to the work/family interface. Many Australian families will continue to choose the FIFO lifestyle, thus it is recommended that the resources sector representative bodies, for example the Minerals Council of Australia (MCA), develop a set of best practice guidelines that individual companies can use as a benchmark to guide and evaluate the development and implementation of practices and policies that best support the wellbeing of their FIFO employees and their families. Similar guidelines have been successfully developed to direct resource companies' best practice in areas such as the employment of women (CMEWA, 2008b) and Indigenous workers in the sector (Centre for Social Responsibility in Mining [CSRM], 2006), and thus set a precedence for developing a similar benchmark for FIFO employment. Companies could then use these best practice guidelines to provide regular training for supervisors and managers on the effectively managing and working with FIFO workforces.

To date, only limited research into the impacts of FIFO on families and communities has been undertaken thus limiting employer understandings of this area. The current study revealed that FIFO employees are not a homogenous group, they vary for example, in age, relationship status, and life stage and thus have different needs and expectations. Furthermore, individual site characteristics such as those listed in Table 24

contribute to the experiences and hence the wellbeing of FIFO workers and their families. It is therefore suggested that individual companies who employ FIFO workers undertake regular surveys of their FIFO workforces and their families in order to understand the impacts of their FIFO work practices on their unique situations so policies and workplace strategies that incorporate flexible work practices that reflect the needs of the different groups in their workforce can be developed and implemented.

Although FIFO employment practices have been used by the Australian land-based mining industry for in excess of 20 years longitudinal studies have yet to be undertaken to investigate the long term impacts on employees and families at different life stages. It is therefore suggested that peak industry bodies such as MCA or the Australian Mines and Metals Association (AMMA) support in particular longitudinal studies in order to better understand the long term impacts of FIFO employment on employees and families and the strategies that can be implemented to best support diversity of people who choose FIFO employment and capitalise on the strengths of the lifestyle and minimise the negatives.

As detailed in Chapter 1 the psychosocial impacts of FIFO employment have, on a number of occasions, been publicly misrepresented by different individuals and organisations in Western Australia for various reasons (e.g., Loney, 2001). For instance, FIFO has been blamed for “children running amok” and contributing to marriage breakdown (Bowler, 2001). The current study revealed that such claims are unsubstantiated and that indeed such negative public comments can impact negatively on FIFO employees and their families by endorsing community misconceptions. Such comments have often been made in the context of public discussions of the socioeconomic impacts of FIFO on some rural and regional communities¹⁹. While it is acknowledged that the introduction of FIFO employment practices to land-based mining has contributed to the demise of a number of small mining towns and limited local investment and expenditure in some regional mining communities (Baddeley, 2008; Lambert, 2001), such impacts do not validate the public misrepresentation of research findings. It is thus recommended that peak industry bodies

¹⁹ See Lambert, 2001; MacKenzie, 2008; and Storey 2001 for a detailed discussion of FIFO impacts on rural communities.

(e.g., CMEWA, QRC, MCA and AMMA) maintain up-to-date data bases of FIFO research findings and widely disseminate these to relevant bodies and stakeholders in a manner that accurately reflects the research conclusions.

Government

In recognition of the greater proportion of the population now engaged in FIFO employment it is recommended that policies, strategies and resources developed and implemented by government departments should recognise, be relevant to and inclusive of the particular needs of FIFO families. For example, providers of community health or social services (e.g., policy research officers, community health nurses, Department of Child Protection case workers) should be fully cognisant of the particular issues associated with a FIFO lifestyle. Furthermore, it would be beneficial if state government departments consider developing FIFO specific resources such as “how to live FIFO” guide which would be provided to resource companies for all of their employees. This should also be provided in community facilities such as libraries, child health facilities and such like. Not only would this guide support for FIFO employees and their families but would also help to educate the wider community as to the realities of living FIFO.

Strengths and Limitations of the Study

In this section the strengths and limitations of the study are discussed. The overall multi-methods design is appraised, and issues particular to each phase of the study, that is, the qualitative and quantitative components, are addressed.

The use of a nested concurrent multi-methods design was a particular strength of this study. Such use of complementary methods, each of which addressed different aspects of the research problem, provided a richness of data that facilitated understanding, analysis and generation of theory with respect to the experiences and wellbeing of FIFO employees and their partners at the individual, relational and family levels (Woolley, 2009). Each method was matched to a specific purpose within the overall study thus providing a more comprehensive understanding of the complex phenomena of the experience of FIFO employment (Barker & Pistrang, 2005; Mertens, 2003; Morse, 2003). However, both the quantitative and qualitative phases of the study were cross-sectional, and as such, examined the informants at one point in time.

As described in Chapter 1 the Australian Resources Industry includes a number of different sectors (e.g., iron ore, off-shore oil and gas), each of which can have distinct FIFO employment practices. Participants in this study were purposefully drawn from a particular mining sector, that is metalliferous mines, thus any application of the findings across other sections of the resources industry, for example offshore oil and gas or iron ore, should be approached with caution. Moreover, the informants did not include any “guest workers” who were in Australia working on 457 Visas²⁰, thus the findings are not applicable to that group of FIFO workers. The sample consisted of native or very competent English speakers so the experiences of culturally and linguistically diverse people are not necessarily characterised in the data. The proportion of male (73%) and female (27%) workers included in the sample is somewhat different from the proportion of males (81%) and females (19%) estimated at that time in the land-based mining industry (CMEWA, 2008b). One way in which the sample may have been biased (i.e., unrepresentative) is that the most disaffected (distressed) people could have been more likely to respond to the invitation to participate in the study. However, it could equally be proposed that the most distressed were least likely to participate (Breakwell, 1995). Similarly, there may have been self-report and interview bias impacts on the study validity as participants may deliberately have attempted to portray a particular image which may or may not have been an accurate reflection of their experience, or there may have been an inherent tendency to report only the positive or negative perspectives of a situation (Breakwell, 1995). Similarly the possibility of interviewer effects on the data need also to be acknowledged (Neuman, 2003) Researcher characteristics such as demeanour, sex, and age in addition to tone, appearance and reactions can impact on the interview (Breakwell, 1995). Furthermore researcher influence can also result from the interviewer's expectations about particular issues. However, all attempts were made to ensure the research process was as rigorous as possible. As detailed in Chapters 5 and 6 such processes included multiple sources of data, maintaining an audit trail, and checking the accuracy of

²⁰ 457 Visas are the most commonly used programs for mining employers to sponsor skilled overseas workers to work in Australia on a temporary basis for between 3 months and 4 years. (Department of Immigration and Citizenship, 2009).

interpretations with informants (Breakwell, 1995; Maykut & Moorehouse, 1994; Morse, 1994; Patton, 1990).

Each of the interviews for the study was conducted in Perth. Although a proportion of Western Australia's FIFO population live outside of the Perth metropolitan area, budgetary and time restraints resulted in the interviews being conducted in Perth. Phone interviews could have been conducted with employees while they were on site, however the decision was made not to do this for the following reasons: the value of personal connection and rapport in interview process (Burgess-Limerick & Burgess-Limerick, 1998; Patton, 2002); concern for the wellbeing of the informant immediately after interview; the informant's ease of access to private communication facilities on site; issues of time constraints and possible distraction (Smith, 1995). There is some evidence to suggest that those who have relocated to regional centres in order to have FIFO employment may have more negative experiences of FIFO as a result of diminished social and family support (Pollard, 1990). Thus application of findings from the current study to a regional FIFO population should be undertaken with caution. However, despite the aforementioned matters, the sampling techniques as outlined in Chapter 4 (Quantitative Phase) and Chapter 5 (Qualitative Phase) were comprehensive and thus confidence in having relatively representative samples of FIFO employees from the particular industry sector is high.

Suggestions for Future Research.

The current study used a cross-sectional design to explore the wellbeing of a sample of FIFO employees and partners and understand the role of contextual factors on their wellbeing. As highlighted earlier in this chapter, further research employing longitudinal data would allow understanding of the cumulative impacts of FIFO employment over time on employees and their families. Although to date, to the researcher's knowledge, no such research has been undertaken, such a project would be justified in light of the projected ongoing use of FIFO employment by the Resources sector in the foreseeable future (CMEWA, 2007, 2008a). Such research could facilitate better support processes for FIFO employees and their families over time. Similarly, research could be extended to further understand the impacts of FIFO on particular profiles of FIFO employees such as those at a particular life stage, those on 457 Visas, those who reside in

rural areas, or particular cultural groups such as Australian Indigenous people. A number of mining companies have indicated their commitment to providing ongoing employment for Australian Indigenous people (Tiplady & Barclay, 2007) and as such more research into the impacts of FIFO employment on Indigenous employees, their families and communities is warranted. Similarly, the minerals industry has expressed a commitment to increasing the gender diversity of its workforce and as such further research into the particular impacts of FIFO employment on female employees is justified (CMEWA, 2008b).

The current study was confined to FIFO employees from a particular sector of the mining industry. Further investigation into the impacts of FIFO employment in other sectors, (for example construction workers who have much longer rosters than operating personnel) or the impacts of particular FIFO job roles.

Few studies to date have explored the impacts of FIFO employment on the children of FIFO employees (e.g., Kaczmarek & Sibbel, 2008; Sibbel, 2001) and the scope of this research did not allow such an investigation. Further studies using both cross-sectional and longitudinal designs and incorporating both quantitative and qualitative methodologies would allow us to better understand children's experiences of having FIFO parents. Similarly, more comprehensive exploration of the impacts and experiences of FIFO employment across the different stages of family life cycle would extend our understandings of this complex lifestyle phenomenon.

Conclusion

The broad aims of this research were to explore the psychosocial wellbeing of Western Australia FIFO employees and partners of FIFO employees at the individual, relational and family levels, and to describe the influence of contextual factors on their wellbeing. This study established that both FIFO employees and partners of FIFO employees were within the norms for healthy functioning on the scales and sub-scales of the measures of psychological wellbeing, relationship satisfaction and perceptions of family function, and that there were no statistically significant differences between the scores of the two groups on any of these measures. Further, there were no significant differences when data were analysed according to family type or profile of absence. Thus,

despite perceptions that regular FIFO employment related absence would have adverse impacts on various aspects of wellbeing, the group of FIFO employees and partners in this study reported similar levels of psychological wellbeing, relationship satisfaction and perceptions of family function to the general Australian population. Similar to the now discounted “Military Family Syndrome” (Jensen et al., 1991a) and “Intermittent Husband Syndrome” (Morrice & Taylor, 1978) of the previous century, it proposed that the presumption of FIFO as a greater risk factor than non-FIFO employment for individual and family dysfunction could be misguided. There is increasing evidence across all Australian industries of greater use of non-traditional work schedules including compressed work schedules, shift work arrangements, part-time work and self-employment. What used to be described as “normal” is nowadays just one of a diversity of work schedules, each of which offers different benefits and disadvantages for people depending on their particular needs and individual circumstances (Wilson, Polzer-Debruyne, Chen & Fernandez, 2007).

A five day block of time allows time to relax yet still accomplish things, we're able to place our children in schools, live in a stable environment and still have a rewarding job at high level in mining operations

I love being out in the bush as well – living out here, I could do it but I miss Perth as well because I like Perth, I like the beach and I surf and so I love FIFO because I get the best of both

FIFO has exceeded my expectations and given me the change of lifestyle I needed after experiencing the end of my marriage and the resignation of employment at a role I was extremely unhappy in I enjoyed living in a mining town but the stability and quality of life available living in Perth outweighs the downside of FIFO and is preferable to a remote town in WA

References

- Adams, D. (1991). Joint long distance commuting and town operation. Paper presented at the *Long distance commuting in the mining and hydrocarbons industries* conference, June 19-20, 1991, Glenelg, South Australia.
- Adams, G. A., King, L. A., & King, D. W. (1996). Relationships of job and family involvement, family social support, and work-family conflict with job and life satisfaction. *Journal of Applied Psychology, 81*(4), 411-420.
- Agazio, J. G., Ephraim, P. M., Flaherty, N. B., & Gurney, C. A. (2002). Health promotion in active-duty military women with children. *Women and Health, 35*(1), 65-82.
- Alexander, M., & Baxter, J. (2005). Impacts of work on family life among partnered parents of young children. *Family Matters, 72*, 18–25.
- Alford, W. K., Malouff, J. M., & Osland, K. S. (2005). Written emotional expression as a coping method in child protective services officers. *International Journal of Stress Management, 12*(2), 177-187.
- Allen, T. D., Herst, D. E. L., Bruck, C. S., & Sutton, M. (2000). Consequences associated with work-family conflict: A review and agenda for further research. *Journal of Occupational Health Psychology, 5*, 278-308.
- Allis, P., & O'Driscoll, M. (2008). Positive effects of nonwork-to-work facilitation on well-being in work, family and personal domains. *Journal of Managerial Psychology, 23*(3), 273-291.
- Arnold, P. (1995). *Long distance commuting and working in remote locations: The impact on psychological well-being, and work performance*. Murdoch, Western Australia: Murdoch University, Division of Psychology, Institute of Research into Safety and Transport.
- Australian Broadcasting Commission. (2008). *ADF to extend troop deployment time*. Retrieved, July 2, 2008, ABC News <http://www.abc.net.au/news/stories/2008/06/04/2265440.htm>
- Australian Bureau of Statistics. (1997). *Mental health and well-being profile of adults, Australia, 1997. ABS Catalogue No. 4326.0*. Canberra: Australian Bureau of Statistics.

- Australian Bureau of Statistics. (2001). *Mining: Feature Article: The Australian mining industry: From settlement to 2000*. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics. (2007a). 2006 Census of population and housing, ABS Catalogue No. 2068.0 – Census Tables, 2007. Accessed 14 February, 2008, Available: <http://www.censusdata.abs.gov.au>
- Australian Bureau of Statistics. (2007b). *Mining operations Australia, 2005-2006; October, 2007, ABS Catalogue No. 8415.0*. Canberra: Australian Bureau of Statistics.
- Australian Bureau of Statistics. (2009). *Western Australian statistical indicators, Mar 2009, ABS Catalogue No. 1367.5*. Canberra: Australian Bureau of Statistics.
- Avery, A. J., Betts, D. S., Whittington, A., Heron, T. B., Wilson, S. H., & Reeves, J. P. (1998). The mental and physical health of miners following the 1992 national pit closure programme: A cross sectional survey using General Health Questionnaire GHQ-12 and Short Form SF-36. *Public Health, 112*(3), 169-173.
- Aryee, S., Fields, D., & Luk, V. (1999). A cross-cultural test of a model of the work-family interface. *Journal of Management, 25*, 491-511.
- Babin, B. J., & Boles, J. S. (1998). Employee behaviour in a service environment: A model and test of potential differences between men and women. *Journal of Marketing, 62*, 77-91.
- Bacharach, S. B., Bamberger, P., & Conley, S. (1991). Work-home conflict among nurses and engineers: Mediating the impact of role stress on burnout and satisfaction at work. *Journal of Organizational Behavior, 12*(1), 39-53.
- Baddeley, T. (2008). *Fly in, Fly out and the case for more social infrastructure in the Pilbara*. Perth: Committee for Economic Development of Australia. Accessed 3 March, 2009 at: http://ceda.com.au/public/publications/ace/fifo_baddeley.html
- Bakker, A. B., & Geurts, S. A. E. (2004). Towards a dual-process model of work home interference. *Work and Occupations, 31*, 345-366
- Baltes, B., & Heydens-Gahir, H. (2003). Reduction of work-family conflict through the use of selection, optimization, and compensation behaviours. *Journal of Applied Psychology, 88*, 1005-1018.

- Balmforth, K., & Gardner, D. (2006). Conflict and facilitation between work and family: Realizing the outcomes for organizations. *New Zealand Journal of Psychology* 35(2), 69-76.
- Bandura, A. (1997). *Self efficacy: The exercise of control*. New York: Freeman.
- Banks, M. H., Clegg, C. W., Jackson, P. R., Kemp, N. J., Stafford, E. M., & Wall, T. D. (1980). The use of the General Health Questionnaire as an indicator of mental health in occupational studies. *Journal of Occupational Psychology*, 53, 187-194.
- Barker, C., & Pistrang, N. (2005). Quality criteria under methodological pluralism: Implications for conducting and evaluating research. *American Journal of Community Psychology*, 35(3/4), 201-212
- Barling, J., & Mendelson, M. B. (1999). Parents' job insecurity affects children's grade performance through the indirect effects of beliefs in an unjust world and negative mood. *Journal of Occupational Health Psychology*, 4, 347-355.
- Barnett, R. C. (1998). Toward a review and reconceptualization of the work/family literature. *Genetic, Social and General Psychology Monographs*, 124(2), 125-182.
- Barnett, R. C. and Hyde, J. S. (2001), Women, men, work, and family: An expansionist theory. *American Psychologist*, 56(10), 781-796.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Baruch, G. K., & Barnett, R. C. (1987). Role quality, multiple role involvement, and psychological well-being in midlife women. *Journal of Personality and Social Psychology*, 51, 578-585.
- Baxter, J., Gray, M., Alexander, M., Strazdins, L., & Bittman, M. (2007). Mothers and fathers with young children: Paid employment, caring and wellbeing. Social Policy Research Paper, No 30. Australian Government Department of Families, Community Services and Indigenous Affairs. Accessed 3 July, 2008 at <http://www.facsia.gov.au/research/prp30/sprp30.pdf>

- Beach, R. (1999). The impact of intense work schedules on family structure: A case study of a 4:1 fly-in/fly-out schedule in the Australian mining industry. In Collis, M., Munro, L. and Russell, S (Eds.), *Sociology for a new millennium: Challenges and prospects* (pp. 289-300). Churchill, Victoria: CeLTS.
- Beach, R., Brereton, D., & Cliff, D. (2003). *Workforce turnover in FIFO mining operations in Australia: An exploratory study*. Brisbane: Centre for Social Responsibility in Mining and the University of Queensland Social Research Centre.
- Bedeian, A. G., Burke, B. G., & Moffett, R. G. (1988). Outcomes of work-family conflict among married male and female professionals. *Journal of Management*, *June*, 475-491.
- Behson, S. C. (2002). Coping with family-to-work conflict: The role of informal work accommodations to family. *Journal of Occupational Health Psychology*, *7*(4), 324-341.
- Bellavia, G., & Frone, M. R. (2003). Work-family conflict. In J. Barling, E. K. Kelloway & R. Frone (Eds.), *Handbook of Work Stress* (pp. 113-148). Thousand Oaks: Sage.
- Beutell, N. J., & Wittig-Berman, U. (2008). Work-family conflict and work-family synergy for generation X, baby boomers, and matures: Generational differences, predictors, and satisfaction outcomes. *Journal of Managerial Psychology*, *23*(5), 507-523.
- Billings, D. W., Folkman, S., Acree, M., & Moskowitz, J. T. (2000). Coping and physical health during caregiving: The roles of positive and negative affect. *Journal of Personality and Social Psychology*, *79*, 131-142.
- Bishop, B. J., & D'Rosario. (2002). Reflections on community psychology in Australia: An introduction. *Journal of Community Psychology*, *3*(6), 591-596.
- Bishop, B. J., Higgins, D., Casella, F., & Contos, N. (2002). Reflections on practice: Ethics, race and worldviews. *Journal of Community Psychology*, *30*, 611-622.
- Bishop, B. J., Sonn, C. C., Fisher, A. T., & Drew, N. M. (2001). Community based community psychology: Perspectives from Australia. In M. Seedat (Ed.), *Community psychology, theory, method and practice: South African and other perspectives* (pp. 371-382). Cape Town: Oxford University Press.

- Bishop, B. J., Sonn, C. C., Drew, N. M., & Contos, N. E. (2002). The evolution of epistemology and concepts in an iterative-generative reflective practice: The importance of small differences. *American Journal of Community Psychology, 30*(4), 493-510.
- Blainey, G. (1994). *The rush that never ended: A history of Australian mining* (4th ed.). Melbourne: Melbourne University Press.
- Blumer, M. (1984). *The Chicago School of Sociology: Institutionalisation, diversity and the rise of sociology*. Chicago: University of Chicago Press.
- Bohle, P., & Tilley, A. J. (1989). The impact of night work on psychological well-being. *Ergonomics, 32*(9), 1089-1099.
- Bohle, P., & Tilley, A. J. (1998). Early experience of shiftwork: Influences on attitudes. *Journal of Occupational & Organizational Psychology, 71*(1), 61.
- Boles, J. S., Howard, W. G., & Donofrio, H. H. (2001). An investigation into the inter-relationships of work-family conflict, family-work conflict and work satisfaction. *Journal of Managerial Issues, 13*, 376-390.
- Bolger, N., DeLongis, A., Kessler, R. C., & Wetherington, E. (1989). The contagion of stress across multiple roles. *Journal of Marriage and the Family, 51*, 75-183.
- Bond, M. A. (1990). Defining research relationship: Maximising participation in an unequal world. In C. K. P. Tolan, F. Chertok & L. Jason (Eds.), *Researching community psychology: Issues of theory and methods*, (183-186). Washington DC: American Psychological Association.
- Boss, P. (1988). *Family stress management*. Newbury Park, Ca: Sage Publications, Inc.
- Boss, P., McCubbin, H. I., & Lester, G. (1979). The corporate executive wife's coping patterns in response to routine husband-father absence. *Family Process, 18*, 79-86.
- Bourg, C., & Segal, M. W. (1999). The impact of family supportive policies and practices on organizational commitment to the army. *Armed Forces & Society, 25*(4), 633-644.
- Bowler, J. (2001). *Inaugural speech: Legislative Assembly*. Perth, W.A.: Government of Western Australia, Hansard.

- Boyar, S. L., Maertz, Jr. C. P., Pearson, A. W., & Keogh, S. (2003). Work-family conflict: A model of linkages between work and family domain variables and turnover intentions. *Journal of Managerial Issues, 15*(2), 175-190.
- Braver, S., Hipke, K., Ellman, I., & Sandler, I. (2004). Strengths-building public policies for children of divorce. In K. J. Maton, C. J. Schell, B. J. Leadbeater, and A. L. Solarz (Eds.), *Investing in children, families, and communities: Strengths-based research and policy* (pp. 53-72). Washington, D.C.: APA Books.
- Bray, P. (1991). Long distance commuting from a family perspective. In M. Shrimpton and K. Storey (Eds.) Long distance commuting in the mining industry: Conference summary: Summary of presentations and workshops from the Centre for Resource Studies/Energy, Mines and Resources Conference. November 26-28, 1990, Saskatoon, Saskatchewan, (pp., 26-27). Queens' University: Canada.
- Breakwell, G. M. (1995). Interviewing. In G.M. Breakwell, S. M. Hammond, C. Fife-Schaw, J. A. Smith (Eds.), *Research methods in psychology* (pp. 230-242). London: Sage.
- Brereton, D., Barclay, M. A., Beach, R., Laffan, W., & Arts, D. (2006). *2005 Survey of mining professionals*. Brisbane: Centre for Social Responsibility in Mining and the University of Queensland Social Research Centre.
- Brereton, D., Beach, R., & Cliff, D. (2003). *Workforce turnover in FIFO mining operations in Australia: Final report*. Centre for Social Responsibility in Mining, University of Queensland.
- Brewer, J., & Hunter, A. (1989). *Multimethod research: A synthesis of styles*. Newbury Park, CA: Sage.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 32*(7), 513-531.
- Bronfenbrenner, U. (1979). Contexts of child rearing: Problems and prospects. *American Psychologist, 34*(10), 844-850.
- Bronfenbrenner, U. (1986). Ecology of the family as a context for human development: research perspectives. *Developmental Psychology, 22*(6), 723-742.

- Brotheridge, C. M., & Lee, R. T. (2005). Impact of work-family interference on general well-being: A replication and extension. *International Journal of Stress Management*, *12*, 203-221.
- Brough, P., & Kelling, A. (2002). Women, work and well-being: An analysis of the work-family conflict. *New Zealand Journal of Psychology*, *31*, 29-38.
- Burgess-Limerick, T., & Burgess-Limerick, R. (1998). Conversational interviews and multiple-case research in psychology. *Australian Journal of Psychology*, *50*(2), 63-70.
- Burke, R. J. (1988). Some antecedents and consequences of work-family conflict. *Journal of Social Behaviour and Personality*, *3*, 253-278.
- Burke, R. J. (1994). Stressful events, work-family conflict, coping, psychological burnout, and wellbeing among police officers. *Psychological Reports*, *75*, 787-800.
- Byles, J., Byrne, C., Boyle, M. H., & Offord, D. R. (1988). Ontario child health study: Reliability and validity of the General Functioning Scale of the McMaster family Assessment Device. *Family Process*, *27*, 97-104.
- Byron, K. (2005). A meta-analytic review of work-family conflict and its antecedents. *Journal of Vocational Behaviour*, *62*, 169-198.
- Carey, P., Spector, I. P., Lantinga, L. J., & Krauss, D. J. (1993). Reliability of the Dyadic Adjustment Scale. *Psychological Assessment*, *5*(2), 238-240.
- Carlson, D. S., Derr, C. B., & Wadsworth, L. L. (2003). The effects of internal career orientation on multiple dimensions of work-family conflict. *Journal of Family and Economic Issues*, *24*, 99-116.
- Carlson, D. S., & Frone, M. R. (2003). Relation of behavioral and psychological involvement to a new four-factor conceptualization of work-family interference. *Journal of Business & Psychology*, *17*, 515-535.
- Carlson, D. S., & Grzywacz, J. G. (2008). Reflections and future directions on measurements in work-family research. In K. Korabik, D. S. K. Lero and D. L. Whitehead (Eds.), *Handbook of work-family integration: Research, theory, and best practices* (pp. 57-73). Burlington: Elsevier.
- Carlson, D. S., & Kacmar, K. M. (2000). Work-family conflict in the organization: Do life role values make a difference? *Journal of Management*, *26*, 1031-1054.

- Centre for Social Responsibility in Mining (no date). *Indigenous employment evaluation tool*. Brisbane: University of Queensland, Centre for Social Responsibility in Mining.
- Chamber of Minerals and Energy Western Australia. (2005). *Fly-in/fly-out: A sustainability perspective*. Perth, W.A: CMEWA.
- Chamber of Minerals and Energy Western Australia. (2007). *A sustainable minerals sector workforce*. Perth, W.A: CMEWA.
- Chamber of Minerals and Energy Western Australia (2008a). *Fly-in, fly-out in the Western Australian resources sector*. Perth, W.A: CMEWA.
- Chamber of Minerals and Energy Western Australia (2008b). *Attraction and retention of women in the Western Australian resources sector*. Perth, W.A: CMEWA.
- Chan, C. J., & Margolin, G. (1994). The relationship between dual-earner couples daily work mood and home affect. *Journal of Social and Personal Relationships*, 11, 573 - 586.
- Charmaz, K. (2000). Grounded theory: Objectivist and constructivist methods. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 509-535). Thousand Oaks, CA: Sage.
- Charmaz, K. (2003). Grounded theory. In J. A. Smith (Ed.), *Qualitative psychology: A practical guide to research methods* (pp. 81-110). London: Sage.
- Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London: Sage.
- Chenitz, W. C., & Swanson, J. M. (Eds.). (1986). *From practice to grounded theory : Qualitative research in nursing*. Menlo Park, CA : Addison-Wesley.
- Chiovitti, R. F., & Piran, N. (2003). Rigour and grounded theory research. *Journal of Advanced Nursing*, 44(4), 427-435.
- Clarke, D., & Taylor, R. (1988). Partings and reunions: Marriage and offshore employment in the British North Sea. In J. Lewis, M. Porter & M. Shrimpton (Eds.), *Women, work and family in British, Canadian and Norwegian oilfields* (pp. 112-139). London: Macmillan Press.

- Coakes, S. J., & Steed, L. (2006). *SPSS Analysis without anguish: Version 14.0 for Windows*. John Wiley & Sons: Milton, Qld.
- Collins, K. M. T., Onwuegbuzie, A. J., & Jiao, Q. G. (2007). A mixed methods investigation of mixed methods sampling designs in social and health science research. *Journal of Mixed Methods Research, 1*(3), 267-294.
- Collinson, D. L. (1998). "Shift-ing lives": Work-home pressures in the North Sea oil industry. *The Canadian Review of Sociology and Anthropology, 35*(3), 301-324.
- Cooke, R. A., & Rousseau, D. M. (1988). Behavioural norms and expectations: A quantitative approach to the assessment of organizational culture. *Group and Organization Studies, 13*(3), 245-273.
- Costa, G. (2003). Shift work and occupational medicine: An overview. *Occupational Medicine, 53*, 83-88.
- Cowen, E. L. (1991). In pursuit of wellness. *American Psychologist, 46*, 404-408.
- Cowen, E. L. (1994). The enhancement of psychological wellness: Challenges and opportunities. *American Journal of Community Psychology, 22*, 149-179.
- Cowen, E. L. (1996). The ontogenesis of primary prevention: Lengthy strides and stubbed toes. *American Journal of Community Psychology, 24*, 235-249.
- Creswell, J. W. (1994). *Research design: Qualitative and quantitative approaches*. Thousand Oaks, CA: Sage.
- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among 5 traditions*. Thousand Oaks, CA: Sage Publications Ltd.
- Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. New Jersey: Merrill Prentice Hall.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative and mixed methods approaches*. (2nd ed.). London: Sage Publications.
- Creswell, J. W. (2005). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (2nd ed.). Upper Saddle River, Ohio: Pearson Prentice Hall.
- Creswell, J. W., Plano Clark, V. L., Guttman, M., & Hanson, W. (2003). Advanced mixed methods research designs. In A. Tashakkori & C. Teddlie (Eds.). *Handbook of mixed*

- methods in social and behavioral research* (pp. 209-240). Thousand Oaks, CA: Sage Publications.
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. St. Leonard's, N.S.W: Allen & Unwin.
- Cutcliffe, J. R. (2000). Methodological issues in grounded theory. *Journal of Advanced Nursing*, 31(6), 1476-1485.
- Dalton, J. H., Elias, M. J., & Wandersman, A. (2001). *Community psychology: Linking individuals and communities*. Belmont, CA: Wadsworth.
- Darlaston-Jones, D. (2004). *Evidence from the Survivors: Factors Affecting Retention of Undergraduate Psychology Students at a Western Australian University and Implications for Cultural Change within Higher Education*. Unpublished doctoral dissertation, Edith Cowan University, Joondalup, WA
- Dempster, F. 2003. *Family and work: Issues and risk across the life course*. Paper presented at the 8th Australian Institute of Family Studies Conference Steps forward for families: Research, policy and practice, Melbourne, February, 2003. Available: www.aifs.gov.au/institute/afrc8/dempster.pdf
- DeLongis, A., Capreol, M., Holtzman, S., O'Brien, T., & Campbell, J. (2004). Social support and social strain among husbands and wives: A multilevel analysis. *Journal of Family Psychology*, 18(3), 470-479.
- Denscombe, M. (2008). Communities of practice: A research paradigm for the mixed methods approach. *Journal of Mixed Methods Research*, 2(3), 270-283.
- Denzin, N. K., & Lincoln, Y. S. (2000). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The handbook of qualitative research* (pp. 1-28). London: Sage Publications Ltd.
- Department of Consumer and Employment Protection. (2003, July). *Extended working hours: Public discussion paper*. Perth, Western Australia: DOCEP.
- Department of Consumer and Employment Protection. (2004). *Extended working hours review*. Perth, Western Australia: Government of Western Australia.
- Department of Industry and Resources. (2007a). *Western Australian Minerals and Resources Statistics Digest 2006*. Perth, Western Australia: DOIR.

- Department of Industry and Resources. (2007b). *Statistics and Economics*. Retrieved 5 March, 2008 from <http://www.doir.wa.gov.au/documents/mineralsandpetroleum/000090.Mike.WILSON.ppt#256,1,Department%20of%20Industry%20and%20Resources%20Statistics%20and%20Economics>
- Department of Industry and Resources. (2008). *Minerals and Petroleum*. Retrieved 5 March, 2008 from <http://www.doir.wa.gov.au/mineralsandpetroleum/>
- Department of Minerals and Energy, W. A., Mining Operations Division. (2001). *Fly-in/Fly-out Operations*. Retrieved July 17, 2002, from <http://www.dme.wa.gov.au>
- Department of Mines and Petroleum. (2009). *Western Australian mineral and petroleum statistics digest 2009*. Available: http://www.dmp.wa.gov.au/documents/Western_Australian_Mineral_and_Petroleum_Statistic_Digest_2009.pdf
- Department of Mines and Petroleum. *Western Australian Resources Industry Shows Encouraging Signs in 2009 Despite Difficult Economic Climate* (2010). Retrieved 9 April, 2010 from <http://www.dmp.wa.gov.au/1525.aspx>
- Dickstein, S., Seifer, R., Hayden, L. C., Schiller, M., Sameroff, A. J., Keitner, G. I., et al. (1998). Levels of family assessment 11: Impact of maternal psychopathology on family functioning. *Journal of Family Psychology*, 12(1), 23-40.
- Dokecki, P. R. (1992). On knowing the community of caring persons: A methodological basis for the reflective-generative practice of community psychology. *Journal of Community Psychology*, 20, 26-35.
- Donath, S. (2001). The validity of the 12-item General Health Questionnaire in Australia: A comparison between three scoring methods. *Australian and New Zealand Journal of Psychiatry*, 35, 231-235.
- Duffy, K. G., & Wong, F. Y. (2003). *Community psychology* (2nd ed.). New York: Allyn & Bacon.
- Durup, R.J.M. (1993). *An integration model of work and family stress: Comparisons of models*. Unpublished doctoral dissertation, Dalhousie University, Halifax, Nova Scotia.

- Eastman, E., Archer, R. P., & Ball, J. D. (1990). Psychosocial and life stress characteristics of navy families: Family Environment Scale and Life Experiences Scale findings. *Military Psychology, 2*(2), 113-127.
- Eaves, Y. D. (2001). A synthesis technique for grounded theory data analysis. *Journal of Advanced Nursing, 35*(5), 654-663.
- Eby, L. T., Casper, W. J., Lockwood, A., Bordeaux, C., & Brinley, A. (2005). Work and family research in IO/OB: Content analysis and review of the literature (1980-2002). *Journal of Vocational Behavior, 66*, 124-197.
- Edwards, J. R., & Rothbard, N. P. (2000). Mechanisms linking work and family: Clarifying the relationship between work and family constructs. *Academy of Management Review, 25*, 178-199.
- Elloy, D. F., & Smith, C. R. (2003). Patterns of stress, work-family conflict, role conflict, role ambiguity and overload among dual-career and single-career couples: An Australian study. *Cross Cultural Management, 10*, 55-66.
- Epstein, N. B., Baldwin, L. M., & Bishop, D. S. (1983). The McMaster Family Assessment Device. *Journal of Family and Marriage Therapy, 9*, 19-31.
- Espino, C. M., Sundstrom, S. M., Frick, H. L., Jacobs, M., & Peters, M. (2002). International business travel: Impact on families and travellers. *Occupational and Environmental Medicine, 59*(5), 309-322.
- Ettner, S. L., & Grzywacz, J. G. (2001). Workers' perceptions of how jobs affect health: A social ecological perspective. *Journal of Occupational Health Psychology, 6*(2), 101-113.
- Fassinger, R. E. (2005). Paradigms, praxis, problems and promise: Grounded theory in counseling psychology research. *Journal of Counseling Psychology, 52*(2), 156-166.
- Finkel, L. B., Kelley, M., & Ashby, J. (2003). Geographic mobility, family and maternal variables as related to the psychosocial adjustment of military children. *Military Medicine, 168*, 1019-1024.
- Folkman, S., & Moskowitz, J. T. (2000). Positive affect and the other side of coping. *American Psychologist, 55*, 647-654.

- Ford, M. T., Heinen, B. A., & Langkamer, K. L. (2007). Work and family satisfaction and conflict: A meta-analysis of cross-domain relations. *Journal of Applied Psychology*, 92(1), 57-80.
- Forsyth, C. J., & Gauthier, D. K. (1991). Families of offshore oil workers: Adaptations to cyclical father absence/presence. *Sociological Spectrum*, 11, 177-201.
- Foster, D., & Cacioppe, R. (1986). When the ship comes home: The stress of the Australian seafarer's partners. *Australian and New Zealand Journal of Family Therapy*, 7(2), 75-82.
- Freed, Jason. (January 21, 2009). Jobs go as BHP cuts WA, Qld operations. The Sydney Morning Herald. Accessed January 21, 2009 at hyyp://business.smh.com.au/business/jobs-go-as-bhp-cuts-wa-qld-operations-2009012107m2q.html.
- Frone, M. R. (2003). Work–family balance. In J. C. Quick & L. E. Tetrick (Eds.), *Handbook of Occupational Health Psychology* (pp. 143–162). Washington, DC: American Psychological Association.
- Frone, M. R., Russell, M., & Cooper, M. L. (1992). Antecedents and outcomes of work-family conflict: Testing a model of the work-family interface. *Journal of Applied Psychology*, 77(1), 65-78.
- Frone, M. R., Yardley, J. K., & Markel, K. S. (1997). Developing and testing an integrative model of the work–family interface. *Journal of Vocational Behavior*, 50, 145–167.
- Gallegos, D. (2006). *Aeroplanes always come back: Fly-in fly-out employment: Managing the parenting transitions*. Perth, Western Australia: Centre for Social and Community Research, Murdoch University.
- Gent, V. M. (2004). *The impact of fly-in/fly-out work on well-being and work-life satisfaction*. Unpublished honours thesis, Murdoch University, Perth W.A.
- Gergen, K. J. (2001). Psychological science in the postmodern context. *American Psychologist*, 56, 803-813.
- Geurts, S.A.E., Kompier, M.A.J., Roxburgh, S., & Houtman, I.L. (2003). Does work-home interference mediate the relationship between workload and well-being? *Journal of Vocational Behavior*, 63(3), 532-559.

- Giddings, L. S. (2006). Mixed-methods research: Positivism dressed in drag? *Journal of Research in Nursing, 11*(3), 195-203.
- Gillies, A. D. S., Just, G.D., & Wu, H. W. (1991). The success of fly-in fly-out. Australian mining operations. *World Gold Conference* (pp. 391-397).
- Gillies, A. D. S., Wu, H. W., & Jones, S. J. (1997, March). *The increasing acceptance of fly-in/fly-out within the Australian mining industry*. Paper presented at the Resourcing the 21st Century: 1997 Annual Conference of the Australasian Institute of Mining and Metallurgy, Ballarat, Victoria.
- Glaser, B. G. (1978). *Theoretical sensitivity*. Mill Valley, CA: The Sociology Press.
- Glaser, B. G. (2002). Constructivist Grounded Theory? *Forum: Qualitative Social Research* [On-line Journal], 3(3). Available at: <http://www.qualitative-research.net/fqs-texte/3-02/3-02glaser-e.htm>
- Glaser, B. G., & Strauss, A. I. (1967). *The discovery of grounded theory: Strategies of qualitative research*. Chicago: Aldine.
- Goldberg, D. P., & Williams, P. (1991). *A user's guide to the General Health Questionnaire*. London: NFER-Nelson Publishing Company.
- Goldberg, D. P., Gater, R., Sartorius, N., Ustunm T. B., Piccinelli, M., Gureje, O., et al. (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychological Medicine, 27*(1), 191-197.
- Good, L. K., Grovalynn, F. S., & Gentry, J. W. (1988). Antecedents of turnover intentions among retail management personnel. *Journal of Retailing, 64*, 295-314.
- Goode, W. J. (1960). A theory of role strain. *American Sociological Review, 23*, 483-496.
- Goyne, A. N. (2001). *Use of the GHQ in an Australian Army population*. Canberra: Commonwealth of Australia.
- Graham, M. C. (2000). *The changing face of fly-in/fly-out mining operations within Australia*. Unpublished bachelor thesis, University of New South Wales.
- Grandey, A. A., & Cropanzano, R. (1999). The conservation of resources model applied to work-family conflict and strain. *Journal of Vocational Behavior, 54*, 350-370.

- Graves, L. M., Ohlott, P. J., & Ruderman, M. N. (2007). Commitment to family roles: Effects on managers' attitudes and performance. *Journal of Applied Psychology, 92*(1), 44-56.
- Gray, M, Qu, L, de Vaus, D & Millward, C. (2003), Determinants of Australian mothers' employment: An analysis of lone and couple mothers. *Australian Journal of Labour Economics, 6*, 597-617.
- Greene, J. C., & Caracelli, V. J. (2003). Making paradigmatic sense of mixed methods practice. In A. A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioural research* (pp. 91-110). Thousand Oaks, CA: Sage Publications.
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Towards a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis, 11*, 255-274.
- Greenhaus, J.H. (1988). The intersection of work and family roles: Individual, interpersonal, and organizational issues. *Journal of Social Behavior and Personality, 3*, 23-44
- Greenhaus, J. H., & Beutell, N. J. (1985). Sources of conflict between work and family roles. *Academy of Management Review, 10*, 76-88.
- Greenhaus, J. H., Collins, K. M., & Shaw, J. D. (2003). The relation between work-family balance and quality of life. *Journal of Vocational Behavior, 63*(3), 510-531.
- Greenhaus, J. H., Collins, K. M., Singh, R., & Parasuraman, S. (1997). Work and family influences on departure from public accounting. *Journal of Vocational Behavior, 50*, 249-270.
- Greenhaus, J. H., & Powell, G. N. (2006). When work and family are allies: A theory of work-family enrichment. *The Academy of Management Review, 31*(1), 72-92.
- Gridley, H., & Breen, L. (2007). So far and yet so near? Community psychology in Australia. In S. M. Reich, M. Riemer, I. Prilleltensky, & M. Montero (Eds.), *International community psychology: History and theories* (pp. 119-139). New York: Springer.

- Gridley, H., Fisher, A. T., Thomas, D. R., & Bishop, B. (2007). Development of community psychology in Australia and Aotearoa/New Zealand. *Australian Psychologist, 42*(1), 15-22.
- Grzywacz, J. G. (2000). Work-family spillover and health during midlife. Is managing conflict everything? *American Journal of Health Promotion, 14*, 236-243.
- Grzywacz, J. G., & Bass, B. L. (2003). Work, family and mental health: Testing different models of work-family fit. *Journal of Marriage and Family, 65*(1), 248-261.
- Grzywacz, J. G., & Marks, N. F. (2000). Reconceptualizing the work-family interface: An ecological perspective on the correlates of positive and negative spillover between work and family. *Journal of Occupational Health Psychology, 5*(1), 111-126.
- Guba, E. G., & Lincoln, Y. S. (1990). *Four-generation evaluation*. Newbury Park, CA: Sage.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). Thousand Oaks, CA: Sage.
- Halvorsen, J. G. (1991). Self-report family assessment instruments: An evaluative review. *Family Practice Research Journal, 11*(1), 21-51.
- Hammer, L. B., Allen, E., & Grigsby, T. (1997). Work-family conflict in dual-earner couples: Within-individual and crossover effects of work and family. *Journal of Vocational Behavior, 50*, 185-203.
- Hammer, L. B., Cullen, J. C., Neal, M. B., Sinclair, R. R. & Shafiro, M. V. (2005), The longitudinal effects of work-family conflict and positive spillover on depressive symptoms among dual-earner couples. *Journal of Occupational Health Psychology, 10*(2), 138-154.
- Hammersley, M. (1992). *What's wrong with ethnology?* London: Routledge.
- Hammond, S. (1997). Using psychometric tests. In G. M. Breakwell, S. Hammond & C. Fife-Schaw (Eds.), *Research methods in psychology* (pp. 194-212). London: Sage.
- Hanson, W. E., Creswell, J. W., Plano Clark, V. L., P., Petska, K. S., & Creswell, J. D. (2005). Mixed methods in research designs in counseling psychology. *Journal of Counseling Psychology, 52*(2), 224-235.

- Hanson, G. C., Hammer, L. B. & Colton, C. L. (2006). Development and validation of a multidimensional scale of perceived work-family positive spillover. *Journal of Occupational Health Psychology, 11*, 249–265.
- Hardy, G. E., Shapiro, D. A., Haynes, C. E., & Rick, J. E. (1999). Validation of the General Health Questionnaire-12 using a sample of employees from England's health care services. *Psychological Assessment, 11*(2), 159-165.
- Heiler, K. (1998). *The 12-Hour Day: Emerging Issues*. Paper presented at The 12-Hour Day: Emerging Issues Forum, Canberra, ACT.
- Heiler, K. (2002). *The struggle for time: A review of extended shifts in the Tasmanian mining industry*. Sydney: University of Sydney.
- Heiler, K, Pickersgill, R. & Briggs, C. (2000). *Working time arrangements in the Australian Mining Industry*. Geneva: International Labour Office.
- Hein, C. (2005). *Reconciling work and family responsibilities: Practical ideas from global experience*. Geneva: International Labour Office.
- Heyman, R. E., Sayers, S. L., & Bellack, A. S. (1994). Global marital satisfaction versus marital adjustment: An empirical comparison of three measures. *Journal of Family Psychology, 8*(4), 432-446.
- Hill, E. J. (2005). Work-family facilitation and conflict, working fathers and mothers, work-family stressors and support. *Journal of Family Issues, 26*(6), 793-819.
- Hill, E. J., Allen, S., Jacob, J., Bair, A. F., Bikhazi, S. L., Van Langeveld, A., Martinengo, G., & Parker, T. T. et al., (2007). Work-family facilitation: Expanding theoretical understanding through qualitative exploration. *Advances in Developing Human Resources, 9*(4), 507-526.
- Hill, J., Bond, M. A., Mulvey, A., & Terenzio, M. (2000). Methodological issues and challenges for feminist community psychology: An introduction to a special issue. *American Journal of Community Psychology, 28*, 759-772.
- Hobfoll, S. E. (1986). The ecology of stress and social support among women. In S. E. Hobfoll (Ed.), *Stress, social support and women* (pp. 3-14). New York: Hemisphere Publishing Corporation.

- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513-524.
- Hobfoll, S. E. (1998). *Stress, culture and community: The psychology and philosophy of stress*. New York: Plenum.
- Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology, 6*(4), 307-324.
- Hobfoll, S. E., Lilly, R. S., & Jackson, A. P. (1992). Conservation of social resources and the self. In H. O. F. Veiel & U. Baumann (Eds.), *The meaning and measurement of social support* (pp. 125-141). Washington, D. C: Hemisphere.
- Hobfoll, S. E., Freedy, J. R., Green, B. L., & Solomon, S. D. (1996). Coping in reaction to extreme stress: The role of resource loss and resource availability. In M. Zeider & N. Endler (Eds.), *Handbook of coping: Research, theory and application* (pp. 322-349). New York: Wiley.
- Hobfoll, S. E., Johnson, R. J., Ennis, N., & Jackson, A. P. (2003). Resource loss, resource gain, and emotional outcomes among inner city women. *Journal of Personality and Social Psychology, 84*(3), 632-643.
- Hobfoll, S. E., & Spielberger, C. D. (1992). Family stress: Integrating theory and measurement. *Journal of Family Psychology, 6*, 99-112.
- Hobson, J., & Beach, J. R. (2000). An investigation of the relationship between psychological health and workload among managers. *Occupational Medicine, 50*, 518-522.
- Holahan, C. J., & Moos, R. H. (1990). Life stressors, resistance factors, and psychological health: An extension of the stress resistance paradigm. *Journal of Personality and Social Psychology, 58*, 900-917.
- Holahan, C. J., Moos, R. H., Holahan, C. K., & Cronkite, R. C. (1999). Resource loss, resource gain, and depressive symptoms: A 10 year model. *Journal of Personality and Social Psychology, 77*(3), 620-629.
- Hosking, A., & Western, M. (2008). The effects of non-standard employment on work-family conflict. *Journal of Sociology, 44*, 5-27.

- Jackson, R. T. (1987). Commuter mining and the Kidston gold mine: Goodbye to mining towns? *Geography*, 72(Part 2, No 315), 162-165.
- Jackson, S.E., Zedeck, S., & Summers, E. (1985), Family life disruptions: Effects of job-induced structural and emotional interference, *Academy of Management Journal*, 28, 574-586.
- Jensen, P. S., Grogan, D., Xenakis, S. N., & Bain, M. W. (1989). Father absence: Effects on child and maternal psychopathology. *Journal of the American Academy of Child & Adolescent Psychiatry*, 28(2), 171-175.
- Jensen, P. S., Martin, D., & Watanabe, H. K. (1996). Children's response to parental separation during operation desert storm. *Journal of the American Academy of Child & Adolescent Psychiatry*, 35(4), 433-441.
- Jensen, P. S., Richters, J., Ussery, T., Blodeau, L., & Davis, H. (1991). Child psychopathology and environmental influences: Discrete life events versus ongoing adversity. *Journal of the American Academy of Child & Adolescent Psychiatry*, 30(2), 303-309.
- Jensen, P. S., Xenakis, S. N., Wolf, P., & Bain, M. W. (1991). The "Military family syndrome" revisited: By the numbers. *Journal of Nervous and Mental Disease*, 179(2), 102-107.
- Jensen, P. S., Watanabe, H. K., Richters, J. E., Corte, R., Roper, M., & Liu, S. (1995). Prevalence of mental disorder in military children and adolescents: Findings from a two-stage community study. *Journal of the American Academy of Child & Adolescent Psychiatry*, 34(1), 1514-1524.
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, 1(2), 112-133.
- Jones, A. P., & Butler, M. C. (1980). A role transition approach to the stresses of organizationally induced family role disruption. *Journal of Marriage and the Family*, 42, 367-376.
- Judge, T. A., Boudreau, J. W., & Bretz, R. D. (1994). Job and life attitudes of male executives. *Journal of Applied Psychology*, 79, 767-782.

- Jupp, J. J., & Mayne, P. R. (1992). Flying apart: Separation distress in female flight attendants. *Australian Psychologist*, 27(3), 154-158.
- Kabacoff, R. I., Miller, I. W., Bishop, D. S., & Epstein, N. B. (1990). A psychometric study of the McMaster Assessment Device in psychiatric, medical and nonclinical samples. *Journal of Family Psychology*, 3, 431-439.
- Kaczmarek, E.A. & Sibbel, A. M. (2008). The psychosocial well-being of children from Australian military and fly-in/fly-out mining families. *Community, Work & Family*, 11, 297-312.
- Kahn, R. L., & Byosiere, P. (1992). Stress in organisation. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (pp 571-650). Palo Alto, CA: Consulting Psychologists Press.
- Katz, D. & Kahn, R. (1978). *The social psychology of organizations* (2nd ed.). New York: John Wiley & Sons.
- Kearney, M. H. (1998). Ready to wear: Discovering grounded formal theory. *Research in Nursing & Health*, 21, 179-186.
- Kelley, M. L., Herzog-Simmer, P. A., & Harris, M. A. (1994). Effects of military-induced separation on the parenting stress and family function of deploying mothers. *Military Psychology*, 6(2), 125-138.
- Kelley, M. L., Hock, E., Bonney, J. F., Jarvis, M. S., Smith, K. M., & Gaffney, M. A. (2001). Navy mothers experiencing and not experiencing deployment: Reasons for staying in or leaving the military. *Military Psychology*, 13(1), 55-71.
- Kelly, J. G. (1986). Context and process: An ecological view of the interdependence of practice and research. *American Journal of Community Psychology*, 14, 581-605.
- Kelly, J. G. (1990). Changing contexts and the field of community psychology. *American Journal of Community Psychology*, 18, 769-792.
- Kelly, J. G. (2006). *Becoming ecological: An expedition into community psychology*. New York: Oxford University Press.
- Keown, N. (2005). *Digging deep for better health: A study of the health status of men in the Goldfields mining industry of Western Australia. Overview report*. Kalgoorlie, W.A.: Goldfields Men's Health Inc.

- Keyes, C. L. M. (2007). Promoting and protecting mental health as flourishing. *American Psychologist*, 62(2), 95-108.
- Kingry-Westergaard, C., & Kelly, J. G. (1990). A contextualist epistemology for ecological research. In P. Tolan, C. Keys, F. Chertok & L. Jason (Eds.), *Researching community psychology: Issues of theory and methods* (pp. 23-31). Washington: American Psychological Association.
- Kinnunen, U., & Mauno, S. (1998). Antecedents and outcomes of work-family conflict among employed men and women in Finland. *Human Relations*, 51(2), 157-177.
- Kirchmeyer, C. (1993). Non-work-to-work spillover: A more balanced view of the experiences and coping of professional women and men, *Sex Roles*, 28, 531-552.
- Kirchmeyer, C. (1995). Managing the work-nonwork boundary: An assessment of organizational boundaries, *Human Relations*, 48(5), 515-537.
- Kopelman, R. E., Greenhaus, J. H., & Connelly, T. F. (1983). A model of work, family, and interrole conflict: A construct validation study. *Organizational Behavior and Human Performance*, 32, 198-215.
- Kossek, E. E., & Friede, A. (2006). The business case: Managerial perspectives on work and the family. In M. Pitt-Catsouphes, E. Ernst Kossek, & S. Sweet (Eds.), *The work and family handbook: Multi-disciplinary perspectives and approaches* (pp. 611-626). New Jersey: Lawrence Erlbaum Associates, Inc.
- Kossek, E. E., & Ozeki, C. (1998). Work-family conflict, policies, and the job-life satisfaction relationship: A review and directions for organizational behavior human resources research. *Journal of Applied Psychology*, 83(2), 139-149.
- LaGrone, D. M. (1978). The military family syndrome. *American Journal of Psychiatry*, 135(9), 1040-1043.
- Lam, P., Hiscock, H., & Wake, M. (2003). Outcomes of infant sleep problems: A longitudinal study of sleep, behaviour and maternal well-being. *Pediatrics*, 111(3), 203-7
- Lambert, D. (2001). *Long distance commuting: Problems for regional Western Australia*. Perth, Western Australia: Office of Robin Chapple, MLC.

- Lapierre, L. M., & Allen, T. D. (2006). Work-supportive family, family-supportive supervision, use of organizational benefits, and problem-focused coping: Implications for work-family conflict and employee well-being. *Journal of Occupational Health Psychology, 11*, 169–181.
- Lawrie, S. M., & Pelosi, A. J. (1995). Chronic fatigue syndrome in the community: Prevalence and associations. *British Journal of Psychiatry, 166*, 793-797.
- Lee, C., Duxbury, L., & Higgins, C. (1994). *Employed mothers: Balancing work and family life. Research Paper, No. 15*. Quebec: Canadian Centre for Management Development
- Lewis, J., Porter, M., & Shrimpton, M. (1988). *Women, work and family in the British, Canadian and Norwegian offshore oilfields*. London: Macmillan.
- Lewis, S., & Cooper, C. L. (1999). The work-family research agenda in changing contexts. *Journal of Occupational Health Psychology, 4*(4), 382-393.
- Limerick, J. M., Crane, R., Roberts, E. J., & Baillie, A. A. (1991, June). Policy implications for government. *Long distance commuting in the mining and hydrocarbons industries*. A national conference conducted by the Australian Mines and Metals Association, Glenelg, South Australia.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic enquiry*. London: Sage.
- Lincoln, Y. S., & Guba, E. G. (2000). Paradigmatic controversies, contradictions, and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 163-188). Thousand Oaks, CA: Sage.
- Loney, G. (2005, September 16). Families coping. *The Geraldton Guardian*, p. 5.
- Lu, L., Kao, Shung-Fang, Chang, Ting-Ting, Wu, Hsin-Pei, & Cooper, C. L. (2008). Work/family demands, work flexibility, work/family conflict, and their consequences at work: A national probability sample in Taiwan. *International Journal of Stress Management, 15*, 1-21.
- Lyness, K. S., & Thompson, D. E. (1997). Above the glass ceiling: A comparison of matched samples of male and female executives. *Journal of Applied Psychology, 82*, 359-375.

- Macbeth, M. (2008). "He's My Best Mate": Fathers, Sons and the Fly In/Fly Out Lifestyle
Unpublished honours thesis, Edith Cowan University, Western Australia
- MacEwen, K. E., & Barling, J. (1994). Daily consequences of work interference with family and family interference with work. *Work and Stress*, 8, 244-254.
- MacKenzie, F. (2008). *Regional development and FIFO*. Presentation at the Fly-in/fly-out Seminar conducted by the Housing and Urban Research Institute of Western Australia, Perth Western Australia. Available:
http://ahuriwa.curtin.edu.au/research/Fly_In_Fly_Out.cfm
- Marks, G. (2006). Family size, family type and student achievement: Cross national differences and the role of socioeconomic and school factors. *Journal of Comparative Family Studies*, 37(1), 1-24.
- Marks, S. R. (1977). Multiple roles and role strain: Some notes on human energy, time and commitment. *American Sociological Review*, 42, 921-936
- Marteau, T. M., Dormandy, E., & Michie, S. (2001), A measure of informed choice. *Health Expectations* 4(2), 99-108.
- Matthews, R. A., Del Priore, R. E., Acitelli, L. K. & Barnes-Farrell, J. L. (2006). Work-to-relationship conflict: Crossover effects in dual-earner couples. *Journal of Occupational Health Psychology*, 11(3), 228-240.
- Mauthner, N. S., Maclean, C., & Mckee, L. (2000). 'My dad hangs out of helicopter doors and takes pictures of oil platforms'; Children's accounts of parental work in the oil and gas industry. *Community, Work & Family*, 3, 133-162.
- Maxwell, P. (2001). Considering the future of Kalgoorlie Boulder: The challenges facing a large remote mining town. *Australasian Journal of Regional Studies*, 7(1), 63-81.
- May, K. A. (1986). Writing and evaluating grounded theory research report. In W. C. Chenitz and J. M. Swanson (Eds.), *From practice to grounded theory* (pp. 146-154). Menlo Park, CA: Addison-Wesley.
- Maykut, P., & Moorehouse, R. (1994). *Beginning qualitative research: A philosophic and practical guide* Falmer Press Teachers' Library Series(6). Washington, D.C.: Taylor & Francis.

- McCabe, C. J., Thomas, K. J., Brazier, J. E., & Coleman, P. (1996). Measuring the mental health status of a population: A comparison of the GHQ-12 and the SG-36 (MHI-5). *The British Journal of Psychiatry*, *169*(4), 517-521.
- McCarthy, B., Ginsberg, R. L., & Cintron, J. A. (2008). Primary prevention in the first two years of marriage. *Journal of Family Psychotherapy*, *19*(2), 143-156.
- McClennan, W. (1998). *Mental health and well-being: Profile of adults*. Canberra: Australian Bureau of Statistics.
- McKee, L., Mauthner, N., & Maclean, C. (2000). 'Family friendly' policies and practices in the oil and gas industry: Employers' perspectives. *Work Employment and Society*, *14*(3), 557-571.
- McLaren, R. (2008). *No more nipples*. ABC television report 10 July, 2008. Accessed 6 June, 2009 at www.abcnet.au/local/stories/2008/07/10/2300560.htm
- McMahon, C. A., Gibson, F., Leslie, G., Cohen, J., & Tennant, C. (2003). Parents of 5-year-old in vitro fertilization children: Psychological adjustment, parenting stress, and the subsequent in vitro fertilization treatment. *Journal of Family Psychology*, *17*(3), 361-369.
- Meegan, S. P., & Goedereis, E. A. (2006). Life task appraisals, spouse involvement in strategies, and daily affect among short- and long-term married couples. *Journal of Family Psychology*, *20*(2), 319-327.
- Merrick, E. (1999). An exploration of quality in qualitative research: Are "reliability" and "validity" relevant? In A. M. Kopala & L. A. Suzuki (Eds.), *Using qualitative methods in psychology* (pp. 25-36). Thousand Oaks, CA: Sage Publications Ltd.
- Mertens, D. M. (2003). Mixed methods and the politics of human research: The transformative-emancipatory perspective. In A. A. Tashakkori & C. Teddlie. (Eds.), *Handbook of mixed methods in the social and behavioral sciences* (pp. 135-164). Thousand Oaks, CA: Sage.
- Mesmer-Magnus, J. R., & Viswesvaran, C. (2005). Convergence between measures of work-to-family and family-to-work conflict: A meta-analytic examination. *Journal of Vocational Behavior*, *67*, 215-232.

- Michie, S., Dormandy, E., & Marteau, T. M. (2004). Increasing screening uptake amongst those intending to be screened: The use of action plans. *Patient Education and Counseling, 55*, 218-222.
- Miles, M. B., & Huberman, A. M. (1988). Drawing valid meaning from qualitative data: Toward a shared craft. In D. M. Fetterman. (Ed.), *Qualitative approaches to evaluation in education*. (pp. 222-244). New York: Praeger.
- Miles, M. B., & Huberman, A. M. (1994). *An expanded source book: Qualitative data analysis* (2nd ed.). Thousand Oaks, CA: Sage.
- Miller, I. W., Epstein, N. B., Bishop, D. S., & Keitner, G. I. (1985). The McMaster Family Assessment Device: Reliability and validity. *Journal of Marital and Family Therapy, 11*(4), 345-356.
- Minichiello, V., Aroni, R., Timewell, E., & Alexander, L. (1995). *In-depth interviewing*. Melbourne, Victoria: Longman.
- Morgan, D. L. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research, 1*(1), 48-76.
- Morrice, J. K. W., & Taylor, R. C. (1978). The intermittent husband syndrome. *New Society, 43*, 12-13.
- Morrice, J. K. W., Taylor, R. C., Clark, D., & McCann, K. (1985). Oil wives and intermittent husbands. *British Journal of Psychiatry, 147*, 479-483.
- Morrow, S. L. (2005). Quality and trustworthiness in qualitative research in counseling psychology. *Journal of Counseling Psychology, 52*, 250-260.
- Morse, J. M. (1994). Designing funded qualitative research. In N. K. Denzin and Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 220-235). Thousand Oaks: Sage.
- Morse, J. M. (2003). Principles of mixed methods and multimethod research design. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioural research* (pp. 189-208). Thousand Oaks, CA: Sage.
- Morse, J. M., & Field, P. A. (1995). *Qualitative research methods for health professionals* (2nd ed.). Thousand Oaks, CA: Sage.

- Muir, J. (1986). *The first wave of the Australian National Survey: Facts and figures about the young CES registrants*. Canberra: Bureau of Labour Market Research, Australian Government Publishing Service.
- Mullen, Kelley & Kelloway (2008). Health and well-being: Outcomes of the work-family Interface, In K. Korabik, D. S. Lero & D. L. Whitehead (Eds.), *Handbook of Work-family Integration: Research, Theory and Best Practices* (pp. 191-214), Amsterdam: Academic Press
- Murray, D. M. (1998). *Design and analysis of group randomized trials*. New York. Oxford University Press.
- Neal, M. B., Hammer, L. B., & Morgan, D. L. (2006). Using mixed methods in research related to work and family. In M. Pitt-Catsoupes, E. Ernst Kossek, & S.Sweet (Eds.), *The work and family handbook: Multi-disciplinary perspectives and approaches* (pp. 587-605). Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Netemeyer, R. G., Boles, J. S., & McMurrian, R. (1996). Development and validation of work-family conflict and family-work conflict scales. *Journal of Applied Psychology*, 81(4), 400-410.
- Neuman, W. L. (2003). *Social research methods: Qualitative and quantitative approaches*. Boston: Allyn & Bacon.
- O'Driscoll, M., Brough, P., & Kalliath, T. (2006). Work-family conflict and facilitation. In F. Jones, R. Burke and M Westman (Eds.), *Work-life balance: A psychological perspective*, (pp. 117-142). London: Taylor & Francis Inc.
- OECD, (2002). *Babies and Bosses - Reconciling work and family life. Volume 1, Australia, Denmark and the Netherlands*. Paris: OECD Publications Service.
- Parasuraman, S., Purohit, Y. S., Godshalk, V. M., & Beutell, N. J. (1996). *Journal of Vocational Behaviour*, 48, 275-300.
- Parker, A. W., Clavarino, A., & Hubinger, L. M. (1998). *The impact of Great Barrier Reef pilotage work on wives and families*. Canberra: Australian Maritime Safety Authority.
- Parker, A. W., Hubinger, L., Green, S., Sargent, L., & Boyd, R. (1997). *A survey of the health, stress and fatigue of Australian Seafarers*. Canberra: Australian Maritime Safety Authority.

- Parkes, K. R. (1999). Shiftwork, job type and the work environment as joint predictors of health-related outcomes. *Journal of Occupation Health Psychology, 4*(3), 256-268.
- Parkes, K. R. (2002). *Psychosocial aspects of work and health in the North Sea oil and gas industry: Summaries of reports published 1996-2001*. Oxford: University of Oxford.
- Parkes, K. R., & Clark, M. J. (1997). *Offshore Technology Report. Psychosocial aspects of work and health in the North Sea oil and gas industry. Part V: Offshore work/leave schedules. Data analysis and review*. (Offshore Technology Report OTO 97 012 Part V). Oxford.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oakes, CA: Sage Publications Inc.
- Pirotta, J. (2006). *An exploration of the experiences of women who work at mine sites on a fly in, fly out basis*. Unpublished master's thesis, Curtin University of Technology, Perth, WA.
- Pitt-Catsouphes, M., Kossek, E. E., & Sweet, S. (2006). Charting new territory: Advancing multi-disciplinary perspectives, methods, and approaches in the study of work and family. In M. Pitt-Catsouphes, E. E. Kossek, & S. Sweet (Eds.), *The work and family handbook: Multi-disciplinary perspectives, methods, and approaches*. (pp. 1-16). Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Pocock, B. (2003). *The work-life collision*. Annandale, N.S.W: The Federation Press.
- Pocock, B., Skinner, N., & Williams, P. (2007). *Work, life and time: The Australian work and life index, 2007*. Adelaide, South Australia: Hawke Research Institute for Sustainable Societies, University of South Australia.
- Pollard, J. (1990). *Fly-in/fly-out: Social implications for remote resource development in Western Australia*. (Discussion paper). Perth, Western Australia: Department of State Development.
- Ponterotto, J. G. (2005). Qualitative research in counseling psychology: A primer on research paradigms and philosophy of science. *Journal of Counseling Psychology, 52*(2), 126-136.

- Ponterotto, J. G., & Grieger, I. (1999). Merging qualitative and quantitative perspectives in a research identity. In M. Kopala & L. A. Suzuki (Eds.), *Using qualitative methods in psychology* (pp. 49-62). Thousand Oaks, CA: Sage Publishers Ltd.
- Presser, H. B. (2000). Non-standard work schedules and marital instability. *Journal of Marriage and the Family*, 62(1), 93-110.
- Pretorius-Heuchert, J. W., & Ahmed, R. (2001). Community psychology, past, present and future. In M. Seedat (Ed.), *Community psychology theory, method, and practice: South African and other perspectives*. (pp. 17-36). Cape Town: Oxford University Press.
- Price, R. (2008). *The Fly-in, fly-out boom in Western Australia*. Unpublished masters case study, Curtin University of Technology, Perth.
- Prilleltensky, I. (1997). Psychological discourse and action. *American Psychologist*, 52(5), 513-535.
- Prilleltensky, I. (2001). Value-based praxis in community psychology: Moving towards social justice and social action. *American Journal of Community Psychology*, 29(5), 747-769.
- Prilleltensky, I., & Nelson, G. (1997). Community psychology: Reclaiming social justice. In D. Fox & I. Prilleltensky (Eds.), *Critical psychology: An introduction* (pp. 166-184). London: Sage.
- Prilleltensky, I., & Nelson, G. B. (2002). *Doing psychology critically: Making a difference in diverse settings*. New York: Palgrave Macmillan.
- Rantanen, J., Kinnunen, U., Feldt, T., & Pulkkinen, L. (2008). Work-family conflict and psychological well-being: Stability and cross-lagged relations within one and six year follow-ups. *Journal of Vocational Behaviour*, 73(1), 37.
- Rappaport, J. (1977). *Community psychology, values, research, action*. New York: Holt, Rhinehart and Wilson.
- Rappaport, J. (1981). In praise of paradox: A social policy of empowerment over prevention. *American Journal of Community Psychology*, 51, 770-778.
- Rappaport, J. (1990). Research methods and the empowerment social agenda. In P. Tolan, C. Keys, F. Chertok, & L. Jason (Eds.), *Researching community psychology: Issues of*

- theory and methods* (pp. 51-63). Washington DC: American Psychological Association.
- Rappaport, J. (2005). Community psychology is (thank God) more than science. *American Journal of Community Psychology*, 35(3/4), 231-238.
- Rappaport, J., & Stewart, E. (1997). A critical look at critical psychology: Elaborating the questions. In D. Fox & I. Prilleltensky (Eds.), *Critical psychology: An introduction* (pp. 301-317). London: Sage Publications.
- Reichardt, C. S., & Cook, T. D. (1979). Beyond qualitative versus quantitative methods. In T. D. Cook & C. S. Reichardt (Eds.), *Qualitative and quantitative methods in evaluation research* (pp. 7-32). Beverly Hills, CA: Sage.
- Renda, J. (2003). Polarisation of families according to work status. Where does part-time employment fit in? *Family Matters*, 64, 17-21.
- Reynolds, S. (2004). *The effects of fly-in fly-out employment in the oil and gas industry on relationships in Western Australia*. Unpublished masters thesis, Notre Dame, Perth, W.A.
- Rosenfeld, J. M., Rosenstein, E., & Raab, M. (1973). Sailor families: The nature of effects of one kind of father absence. *Child Welfare*, 52, 33-44.
- Rothausen, T. J. (1999). "Family" in organizational research: A review and comparison of definitions and measures. *Journal of Organizational Behaviour*, 20, 817-836.
- Ruderman, M. N., Ohlott, P. J., Panzer, K. & King, S. N. (2002), Benefits of multiple roles for managerial women, *Academy of Management Journal*, 45(2), 369-386.
- Russell, A., & Russell, G. (1994). Coparenting early school-age children: An examination of mother-father interdependence within families. *Developmental Psychology*, 30(5), 757-770.
- Sandler, I. (2001). Quality and ecology of adversity as common mechanisms of risk and resilience. *American Journal of Community Psychology*, 29(1), 19-61.
- Sarason, S. (1981). *Psychology misdirected*. New York: Free Press.
- Sarason, I., Sarason, B., Shearin, E., & Pierce, G. (1987). Psychosocial adaptation and birth outcomes: The role of personal resources, stress, and sociocultural context in pregnancy. *Health Psychology*, 18, 333-345.

- Sawyer, M. G., Sarris, A., Baghurst, P. A., Cross, D. G., & Kalucy, R. S. (1988). Family Assessment Device: Reports from mothers, fathers, and adolescents in community and clinic families. *Journal of Marriage and Family Therapy*, 14, 287-296.
- Schultheiss, D. E. P. (2006). The interface of work and family life. *Professional Psychology: Research and Practice*, 37(4), 334-341.
- Schwandt, T. (2006). Opposition redirected. *International Journal of Qualitative Studies in Education*, 19, 803-810.
- Shadish, W. R. J. (1990). Defining excellence criteria in community research. In P. Tolan, C. Keys, F. Chertok & L. Jason (Eds.), *Researching community psychology: Issues of theory and methods* (pp. 9-20). Washington: American Psychological Association.
- Shrimpton, M., & Storey, K. (1989). Fly-in mining: New challenges for mines managers. *Mineral Resources Engineering*, 2(4), 317-327.
- Shrimpton, M., & Storey, K. (2000, 26-28 June 2000). *Managing the relationship between the offshore oil industry and frontier regions*. Paper presented at the SPE International Conference on Health, Safety and Environment in Oil and Gas Exploration and Production, Stavanger, Norway.
- Shrimpton, M., Storey, K., & Husbers, W. (1995). *Workers in remote areas: the petroleum, mining and forest industries*. Geneva, Switzerland: Working paper prepared for the International Labour Office - Occupational Health and Safety Branch.
- Sibbel, A. M. (2001). *The Psychosocial Well-being of Children from Fly-in/Fly-out Mining Families*. Unpublished honours thesis, Edith Cowan University, Perth.
- Sibbel, A. M. (2004). *Family friendly policies: Residential and fly-in/fly-out perspectives*. (Unpublished report). Perth, W.A.
- Sibbel, A. M., & Kaczmarek, E. A. (2005, July). *When the dust settles, how do families decide? Residential or FIFO?* Paper presented at the 14th Biennial Australasian Human Development Conference, Perth, W.A.
- Sibbel, A. M., Sibbel, J., & Goh, K. (2006). *Fly in, fly out operations: Strategies for managing employee wellbeing*. Paper presented at the Australasian Institute of Mining and Metallurgy International Mine Management Conference, Melbourne, Victoria.

- Sieber, S. D. (1974). Toward a theory of role accumulation. *American Sociological Review*, 39, 567-578.
- Sikora, P., Moore, S., Grunberg, L., & Greenberg, E. (2007). *Work-Family Conflict: An Exploration of Causal Relationships in a 10-year, 4-wave Panel Study*. Working Paper PEC2007-0001. Institute of Behavioural Science Political and Economic Change Program. University of Colorado.
- Slattery, J. M., Smith, W. N., Krapf, M. L., Buchenauer, E. L., & Bean, T. (April, 2001). *Measuring improvement in family functioning in family therapy using the Family Assessment Device*. Paper presented at the Annual Meeting eastern Psychological Association, Washington, D.C.
- Smith, J. (1995). Semi-structured interviewing and qualitative analysis. In J. Smith, R. Harre & L. van Langenhove (Eds.), *Rethinking methods in psychology* (pp. 9-26). London: Sage.
- Smith, J. (Ed.). (2003). *Qualitative Psychology: A practical guide to research methods*. Thousand Oaks, CA: Sage
- Snow, D. L., Swan, S. C., Raghaven, C., Connell, C. M., & Klein, I. (2003). The relationship of work stressors, coping and social support to psychological symptoms among female secretaries. *Work and Stress*, 17, 241-263.
- Solheim, J. (1988). Coming home to work: men, women and marriage in the Norwegian offshore oil industry. In J. Lewis, M. Porter & M. Shrimpton (Eds.), *Women, work and family in the British, Canadian and Norwegian offshore oilfields* (pp. 19-31). London: Macmillan.
- Spanier, G. B. (2001). *The Dyadic Adjustment Scale: User's manual*. New York: Multi-Health Systems Inc.
- Squire, S., & Tilly, J. (2007). *It's about time: Women, men, work and family: Final paper 2007*. Sydney: Human Rights and Equal Opportunities Commission.
- Stephens, M. A., & Sommer, S. M. (1996). The measurement of work to family conflict. *Educational and Psychological Assessment*, 56, 475-486.

- Storey, K. (2001). *Fly-in fly-out and fly-over mining: Mining and regional development*. Paper presented at the Fly In Fly Out Operations - issues and management, conference, Cairns, Queensland.
- Storey, K. S., Lewis, J., Shrimpton, M., & Clark, D. (1988). Working offshore: Family adaptations to rotational work in Newfoundland's oil and gas community. In C. C. N. T. B. Brealey, & P. W. Newton (Eds.), *Resource communities: Settlement and workforce issues* (pp. 353-383). Melbourne: CSIRO.
- Storey, K., & Shrimpton, M. (1989). *Impacts on Labour of Long Distance Commuting Employment in the Canadian Mining Industry* (No. ISER Report No. 3). Newfoundland: Institute of Social and Economic Research, Memorial University of Newfoundland.
- Storey, K., & Shrimpton, M. (1991a). "Fly-in" mining: pluses and minuses of long-distance commuting. *The Mining Review*, 15(6), 27-35.
- Storey, K., & Shrimpton, M. (June 19-20, 1991b). *Long-distance commuting: Mining and hydrocarbon industry management issues*. Paper presented at the Long distance commuting in the mining and hydrocarbons industries, Glenelg, South Australia.
- Storey, K., & Shrimpton, M. (1991c). Long distance commuting in the mining industry: An overview. In M. Shrimpton & K. Storey (Eds.) *Long distance commuting in the mining industry: Conference summary: Summary of presentations and workshops from the Centre for Resource Studies/Energy, Mines and Resources Conference* (pp. 8-11). Saskatoon, Saskatchewan, Canada: Queens' University.
- Storey, K., Shrimpton, M., Lewis, J., & Clark, D. (1989). *Family life impacts of offshore oil and gas employment* (No. ISER Report No. 4.). Newfoundland: Institute of Social and Economic Research, Memorial University of Newfoundland.
- Strauss, A. (1987). *Qualitative analysis for social scientists*. New York: Cambridge University Press.
- Strauss, A. L. (1997). *Mirrors and masks: The search for identity*. London: Transaction Publishers
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage Publications Inc.

- Strauss, A., & Corbin, J. (1994). Grounded theory methodology: An overview. In N. K. Denzin, & Y. S. Lincoln, (Eds.), *Handbook of Qualitative Research* (pp. 273-285). London: Sage.
- Strauss, A. & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2nd ed.). Thousand Oaks, CA: Sage.
- Strazdins, L., Clements, M. S., Korda, R. J., Broom, D. H., & D'Souza, R. M. (2006). Unsociable work? Nonstandard work schedules, family relationships, and children's well-being. *Journal of Marriage and the Family*, 68, 394-410
- Sumer, H. C., & Knight, P. A. (2001). How do people with different attachment styles balance work and family? *Journal of Applied Psychology*, 86, 653-663
- Sutherland, V. J., & Cooper, C. L. (1996). *Stress prevention in the offshore oil and gas exploration and production industry*. Geneva: International Labour Organization.
- Sutherland, V. J., & Flin, R. H. (1989). Stress at Sea: A review of working conditions in the offshore oil and fishing industries. *Work & Stress*, 3(3), 269-285.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Needham Heights, MA: Allyn & Bacon.
- Tashakkori, A., & Creswell, J. W. (2007). The new era of mixed methods. *Journal of Mixed Methods Research*, 1(1), 3-7.
- Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches* (Vol. 46). London: Sage Publications.
- Tashakkori, A., & Teddlie, C. (2003) (Eds.). *Handbook of mixed methods in social & behavioral research*. Thousand Oaks, CA: Sage Publications..
- Taylor, J. C. (2006). *Family stress and coping in the fly-in fly-out workforce*. Unpublished masters thesis, Monash University, Melbourne, Victoria.
- Taylor, R., Morrice, J. K. W., Clark, D., & McCann, K. (1985). The psycho-social consequences of intermittent husband absence: An epidemiological study. *Social Science and Medicine*, 20(9), 877-885.
- Teddlie, C., & Tashakkori, A. (2003). Major issues and controversies in the use of mixed methods in the social and behavioural sciences. In A. Tashakkori, & C. B. Teddlie

- (Eds.), *Handbook of mixed methods in social and behavioural research* (pp. 3-50). Thousand Oaks, CA: Sage Publications Ltd.
- Thoits, P. A. (1995). Stress, coping, and social support processes: Where are we? What next? *Journal of Health and Social Behaviour*, 36, 53-79.
- Thomas, L. T., & Ganster, D. C. (1995). Impact of family-supportive work variables on work family conflict and strain: A control perspective. *Journal of Applied Psychology*, 80(1), 6-15.
- Thomas, D. R., & Veno, A. (1996). *Community psychology and social change: Australian and New Zealand perspectives*. Palmerston North, NZ: Dunmore Press.
- Thornwaite, L. (2002). *Work-family balance: International research on employee preferences*. Working Paper 79. Sydney: Australian Centre for Industrial Relations Research and Training. Available <http://pandora.nla.gov.au/pan/22289/20021221-0000/www.acirrt.com/pubs/WP79.pdf>
- Tiplady, T., & Barclay, M. A. (2007). Indigenous employment in the Australian minerals industry, Brisbane: The Centre for Social Responsibility in Mining, University of Queensland. Retrieved from http://www.csr.m.uq.edu.au/docs/CSRM%20Report_FINAL%20TO%20PRINT_single_s.pdf
- Tolan, P., Chertok, F., Keys, C., & Jason, L. (1990). Conversing about theories, methods and community research. In P. Tolan, C. Keys, F. Chertok & L. Jason (Eds.), *Researching community psychology: Issues of theory and method* (pp. 3-8). Washington: American Psychological Association.
- Toro, P. A., Trickett, E. J., Wall, D. D., & Salem, D. A. (1991). Homelessness in the United States: An ecological perspective. *American Psychologist*, 46(11), 1208-1218.
- Trickett, E. J., Barone, C., & Buchanan, R. M. (1996). Elaborating developmental contextualism in adolescent research and intervention: Paradigm contributions from community psychology. *Journal of Research on Adolescence*, 6(3), 245-269.
- Van Hemert, A. M., Den Heijer, M., Vorstenbosch, M., & Bolk, J. H. (1995). Detecting psychiatric disorders in medical practice using the General Health Questionnaire. Why do cut-off scores vary? *Psychological Medicine*, 25(1), 165-170.

- van Steenbergen, E. F., Ellemers, N., & Mooijaart, A. (2007). How work and family can facilitate each other: Distinct types of work-family facilitation and outcomes for women and men. *Journal of Occupational Health Psychology, 12*(3), 279-300.
- Vormbrock, J. K. (1993). Attachment theory as applied to wartime and job-related marital separation. *Psychological Bulletin, 114*(1), 122-144.
- Voydanoff, P. (2001). Conceptualizing community in the context of work and family. *Community, Work & Family, 4*, 133–156.
- Voydanoff, P. (2004a). The effects of work demands and resources on work-to-family conflict and facilitation. *Journal of Family and Marriage, 66*(May), 398-412.
- Voydanoff, P. (2004b). Implications of work and community demands and resources for work-to-family conflict and facilitation. *Journal of Occupational Health Psychology, 9*(4), 275-285.
- Voydanoff, P. (2005). Work-family fit and balance: A demands and resources approach. *Journal of Marriage and Family, 67*(November), 822-836.
- Voydanoff, P. (2007). *Work, family and community: Exploring interconnections*. Mahwah, NJ: Lawrence Erlbaum.
- Voydanoff P (2008). A conceptual model of the work-family interface. In K. Korabik, D. S. K, Lero & D. L. Whitehead DL (Eds.) *Handbook of work-family integration: Research, theory and best practices* (pp. 37-56). Amsterdam: Academic Press
- Ware, J. E., & Sherbourne, C. D. (1992). The MOS 36-item Short-Form health survey (SF-36): I. Conceptual framework and item selection. *Medical Care, 30*, 473-83.
- Warr, P. B., Cook, J., & Wall, T. D. (1979). Overall Job Satisfaction Scale. In J. D. Cook, S. J. Hepworth, T. D. Hall & P. B. Warr (Eds.), *The experience of work: A compendium and review of 249 measures and their use* (pp. 32-34). San Diego: Academic Press.
- Watts, J. (2004). *Best of both worlds: Fly in- fly out research project final report*. Karratha, W.A: Pilbara Regional Council.
- Wayne, J. H., Grzywacz, J. G., Carlson, D. S., & Kacmar, K. M. (2007). Work–family facilitation: A theoretical explanation and model of primary antecedents and consequences. *Human Resource Management Review, 17*(1), 63-76.

- Wiersma, U. J., & van den Berg, P. (1991). Work-home role conflict, family climate, and domestic responsibilities among men and women in dual-earner families. *Journal of Applied Social Psychology, 21*, 1207-1217.
- Werbel, J., & Walter, M. H. (2002). Changing views of work and family roles: A symbiotic perspective. *Human Resource Management Review, 12*, 293–298.
- Westman, M., & Etzion, D. (1995). Crossover of stress and resources from one spouse to another. *Journal of Organizational Behaviour, 16*, 169-181.
- Westman, M., & Piotrkowski, C. S. (1999). Introduction to the special issue: Work-family research in Occupational Health Psychology. *Journal of Occupational Health Psychology, 4*, 301-306.
- Whitehead, D. L., Korabik, K., & Lero D. S. (2008). Work-family integration: Introduction and overview. In K. Korabik, D. S. Lero & D. L. Whitehead (Eds.) *Handbook of work-family integration: Research, theory and best practices* (pp. 3-12). Amsterdam: Academic Press
- Whitely, B. E. J. (2001). *Principles of research in behavioral science* (2nd ed.). Boston: McGraw Hill.
- Whittemore, R., Chase, S. K., & Mandle, C. L. (2001). Validity in qualitative research. *Qualitative Health Research, 11*(4), 522-537.
- Wicker, A. W. (1985). Getting out of our conceptual ruts: Strategies for expanding conceptual frameworks. *American Psychologist, 40*(10), 1094-1103.
- Wicker, A. W. (1990). Levels of analysis as an ecological issue in the relational psychologies. In P. Tolan, C. Keys, F. Chertok, & L. Jason, (Eds.), *Researching community psychology: Issues of theory and methods* (pp. 127-131). Washington, DC: American Psychological Association.
- Wilkinson, S. (2000). Feminist research traditions in health psychology: Breast cancer research. *Journal of Health Psychology, 5*, 359-372.
- Wilson, K. L., Charker, J., Lizzio, A., Halford, K., & Kimlin, S. (2005). Assessing how much couples work at their relationships: The behavioural self-regulation for effective relationships scale. *Journal of Family Psychology, 19*(3), 385-393.

- Wilson, M. G., Polzer-Debruyne, A., Chen, S., & Fernandes, S. (2007). Shift work interventions for reduced work-family conflict. *Employee Relations*, 29(2), 162-177.
- Winefield, A., Gillespie, N., Stough, C., Dua, J., Hapuarachchi, J., & Boyd, C. (2003). Occupational stress in Australian university staff: Results from a national survey. *International Journal of Stress Management*, 10(1), 51-63.
- Winefield, H. R., Goldney, R. D., Winefield, A. H., & Tiggemann, M. (1989). The General Health Questionnaire: Reliability and validity for Australian youth. *Australian and New Zealand Journal of Psychiatry*, 23, 53-58.
- Witten, K., Penney, L., Faalau, F., & Jensen, V. (2006). *Neighbourhood environments that support families*. Wellington, NZ: Families Commission
- Woolley, C. (2009). Meeting the mixed methods challenge of integration in a sociological study of structure and agency. *Journal of Mixed Methods Research* 3(1), 7-25.
- Wooden, M. (2003, November). *Balancing work and family at the start of the 21st century: Evidence from the Wave 1 of the HILDA Survey*. Paper presented to the Pursuing Opportunity and Prosperity: The 2003 Melbourne Institute Economic and Social Outlook Conference, Melbourne. Retrieved from <http://www.melbourneinstitute.com/conf/prevconf/pop2003papers.html>
- Zimmerman, T. S., Haddock, S. A., Current, L. R., & Ziemba, S. (2003). Intimate partnership: Foundation to the successful balance of family and work. *American Journal of Family Therapy*, 31, 107-124.

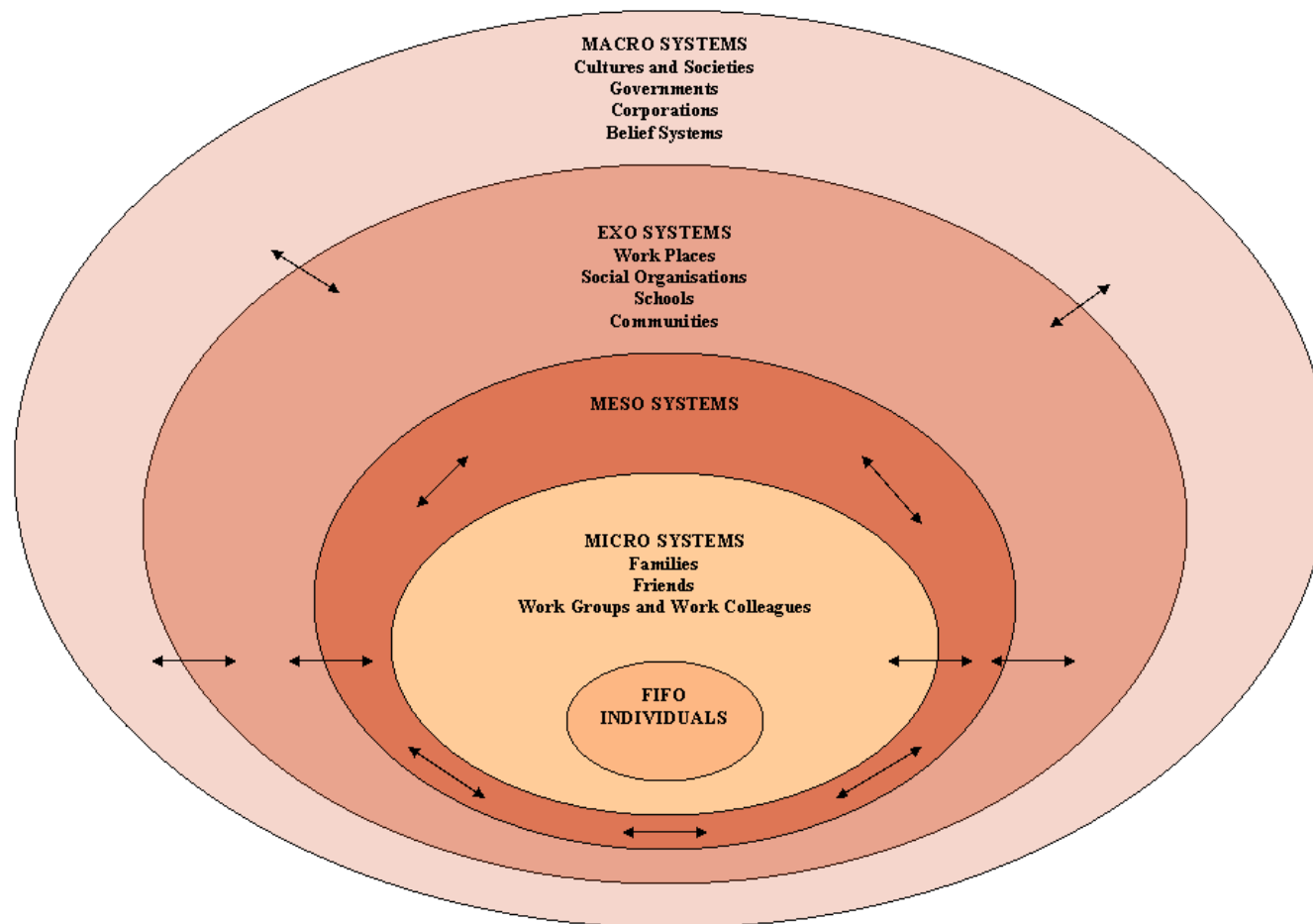


Figure 11. Ecological systems levels of analysis. Adapted from Bronfenbrenner (1979)

Appendix B

Sample Items from the General Health Questionnaire-12

(Goldberg & Williams, 1991)

We should like to know if you have had any medical complaints, and how your health has been in general, over the past few weeks. Please answer ALL of the questions on the following pages simply by underlining the answer which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those you had in the past. It is important that you try to answer ALL the questions.

Thank you very much for your co-operation.

HAVE YOU RECENTLY

1. been able to concentrate on whatever you're doing?

Better than usual Same as usual Less than usual Much less than usual

4. felt capable of making decisions about things?

More so than usual Same as usual Less so than usual Much less capable

8. been able to face up to your problems?

More so than usual Same as usual Less able than usual Much less able

12. been feeling reasonably happy, all things considered?

More so than usual About same as usual Less so than usual Much less than usual

Sample Items from the Dyadic Adjustment Scale

(Spanier, 2001)

Most people have disagreements in their relationships. Please indicate below the approximate extent of agreement or disagreement between you and your partner for each item on the following list.

1. Handling family finances

Always agree	Almost always agree	Occasionally disagree	Frequently disagree	Almost always disagree	Always disagree
[]	[]	[]	[]	[]	[]

6. Sex relations

Always agree	Almost always agree	Occasionally disagree	Frequently disagree	Almost always disagree	Always disagree
[]	[]	[]	[]	[]	[]

14. Leisure time interests and activities

Always agree	Almost always agree	Occasionally disagree	Frequently disagree	Almost always disagree	Always disagree
[]	[]	[]	[]	[]	[]

1. How often do you and your partner quarrel?

All of the time	Most of the time	More often than not	Occasionally	Rarely	Never
[]	[]	[]	[]	[]	[]

How often would you say the following events occur between you and your mate?

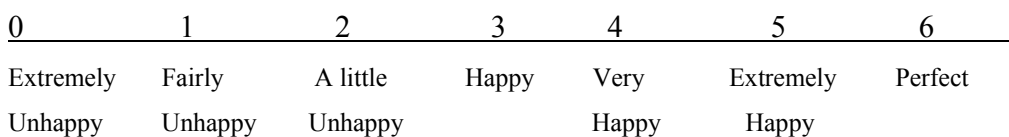
25. Have a stimulating exchange of ideas

Never	Less than once a month	Once or twice a month	Once or twice a week	Once a day	More often
[]	[]	[]	[]	[]	[]

There are some things about which couples sometimes agree and sometimes disagree. Indicate if either item below caused differences of opinions or were problems in your relationship during the past few weeks. (Check Yes or No).

29. Being too tired for sex No [] Yes []

The following dots on the line represent different degrees of happiness in your relationship. The middle point "happy" represents the degree of happiness of most relationships. Please circle the dot which best describes the degree of happiness, all things considered, of your relationship.



32. Which of the following statements best describes how you feel about the future of your relationship?

(a) I want desperately for my relationship to succeed, and **would go to almost any length** to see that it does

(b) I want very much for my relationship to succeed, and **will do all I can** to see that it does

(c) I want very much for my relationship to succeed, and **will do my fair share** to see that it does

(d) It would be nice if my relationship succeeded, but **I can't do much more than I am doing now** to help it succeed

(e) It would be nice if it succeeded, but **I refuse to do any more that I am doing now** to keep the relationship going

(f) My relationship can never succeed, and **there is nothing more that I can do** to keep the relationship going.

Sample Items from the McMaster Family Assessment Device

(Epstein, Baldwin, & Bishop, 1983).

Questions about your family

These questions ask you to think carefully about your family **as a whole**. There are 60 statements about families. Please read each statement carefully and decide how well it describes your family. Circle the one answer you think most applies to your family as a whole.

Problem Solving sub-scale

2. We resolve most everyday problems around the house.

Strongly Agree Agree Disagree Strongly Disagree

Communication sub-scale

3. When someone is upset the others know why.

Strongly Agree Agree Disagree Strongly Disagree

Roles sub-scale

10. We make sure family members meet their responsibilities.

Strongly Agree Agree Disagree Strongly Disagree

Affective Responsiveness sub-scale

49. We express tenderness.

Strongly Agree Agree Disagree Strongly Disagree

Affective Involvement sub-scale

5. If someone is in trouble, the others become too involved

Strongly Agree Agree Disagree Strongly Disagree

Behaviour Control sub-scale

20. We know what to do in an emergency.

Strongly Agree Agree Disagree Strongly Disagree

General Functioning sub-scale

6. In times of crisis we can turn to each other for support.

Strongly Agree Agree Disagree Strongly Disagree

Fly-in/Fly-out Lifestyle Survey: FIFO Employees

We are interested in finding out about you, your family and your current employment. Some of the questions listed below may not apply to you and so you do not need to answer them. However, for questions you feel you want to answer please select the response which best suits you by placing a tick or a cross in the appropriate box. For some of the questions we have asked you to write a response. The answers that you provide are strictly confidential.

1. Your name: _____
First name Surname

2. Your age: _____

3. Your gender: Male [] Female []

4. How would you describe your immediate family?

- [] Single – never married
[] Couple – no children
[] Divorced
[] Nuclear family (e.g. mother, father and children)
[] Blended family (e.g. remarried or re-partnered and children)
[] Other _____

5. If you have a child/children please state their age/s.

Children's ages: _____

Do these children live with you in your current relationship?

[] yes [] no

6. Who in the family is currently employed? (tick all that apply)

[] self [] partner [] someone else (eg child)

7. How many years have you been working in the mining industry?

_____ years

8. How long have you been working at this mine?

_____ years

9. What is your job title?

10. Please describe your current work position and tasks

11. How many years have you lived in Western Australia?

12. Have you lived in any Australian mining towns?

Yes [] No []

If yes, please list the towns and how long you lived in each location

Your views about your employment in the mining industry?

13. Overall, how rewarding or enjoyable has your mining career been?

1	2	3	4	5
Not enjoyable or rewarding		Neutral		Very enjoyable or rewarding

14. How much job satisfaction is there for you in your current position?

1	2	3	4	5
Not satisfied		Neutral		Very satisfied

15. How do you like your work in your current position?

1	2	3	4	5
Not enjoyable or rewarding		Neutral		Very enjoyable or rewarding

16. Approximately how long have you been in fly-in/fly-out employment

17. How long do you want to continue in fly-in/fly-out employment

- less than 1 year
- between 1 - 2 years
- between 2 - 3 years
- between 3 - 4 years
- between 4 - 5 years
- more than 5 years
- unknown

18. How long do you think you will continue in fly-in/fly-out employment?

- less than 1 year
- between 1 - 2 years
- between 2 - 3 years
- between 3 - 4 years
- between 4 - 5 years
- more than 5 years
- unknown

19. What is the length of your roster cycle? Please circle whether it is days or weeks.

Home days/weeks Away days/weeks

If your roster is more complex or irregular please describe it below.

20. Have you experienced different roster cycle lengths?

Yes No

If yes, please describe these below

21. What is your preferred roster cycle of those commonly offered by the industry? Please circle whether it is days or weeks

Home days/weeks Away days/weeks

Please explain why you prefer this roster

22. Do you travel to and from the mine in your time or in company time?

Travel to site Own time Company time
Travel from site Own time Company time

23. How do you feel about your fly-in/fly-out lifestyle?

1 2 3 4 5
Not enjoyable Neutral Very enjoyable
or rewarding or rewarding

24. Is the fly-in/fly-out lifestyle what you thought it would be?

1 2 3 4 5
Not at all like Neutral Very much like
I expected I expected

How satisfied are you with the following aspects of fly-in/fly-out?

25. Your current roster cycle?

1	2	3	4	5
Not satisfied		Neutral		Very satisfied

26. Social aspects of your work environment (e.g. friendship, social activities, physical activities)?

1	2	3	4	5
Not satisfied		Neutral		Very satisfied

27. Support provided by the company to attend to non-work issues (e.g. family or personal issues)?

1	2	3	4	5
Not satisfied		Neutral		Very satisfied

28. Quality of accommodation on site?

1	2	3	4	5
Not satisfied		Neutral		Very satisfied

29. Availability of communication from site to your family?

1	2	3	4	5
Not satisfied		Neutral		Very satisfied

30. The impact of fly-in/fly-out employment on your family members?

1	2	3	4	5
no benefit negative impact		Neutral		a lot of benefit positive impact

Please provide a list of any other aspects of fly-in/fly-out employment that you **are** satisfied with.

Please provide a list of any other aspects of fly-in/fly-out employment that you are **not** satisfied with.

31. Have you worked for a mining company in a non-FIFO capacity?

Yes [] No []

If yes, please mark which type of employment you prefer

FIFO [] Non FIFO []

32. Why do you choose to stay in FIFO employment rather than living in a mining town?

Please feel free to add any other relevant comments about your employment in the mining industry

Thank you for your time and for completing this survey.

If you have any questions concerning the study please contact Mrs Anne Sibbel on 08 9571 2080 or Dr Elizabeth Kaczmarek on 08 6304 5193

Fly-in/Fly-out Lifestyle Survey: Partners

We are interested in finding out about you, your family and your current employment. Some of the questions listed below may not apply to you and so you do not need to answer them. However, for questions you feel you want to answer please select the response which best suits you by placing a tick or a cross in the appropriate box. For some of the questions we have asked you to write a response. The answers that you provide are strictly confidential.

1. Your name: _____
First name Surname

2. Your age: _____

3. Your gender: Male [] Female []

4. How would you describe your immediate family?

- Single – never married
- Couple – no children
- Divorced
- Nuclear family (e.g. mother, father and children)
- Blended family (e.g. remarried or re-partnered and children)
- Other _____

5. If you have a child/children please state their age/s.

Children's ages: _____

Do these children live with you in your current relationship?

yes no

6. Who in the family is currently employed outside of the home? (tick all that apply)

self partner someone else (eg child)

7. Please describe your current work position and tasks

8. How many years have you lived in Western Australia?

9. Have you lived in any Australian mining towns?

Yes [] No []

If Yes, please list the towns and how long you lived in each location.

10. During the past 12 months for how many months in total would you say that you have been away from home due to work commitments? If you had multiple absences, e.g. 3 trips each lasting 3 weeks, you would say that you had been absent from home for 1 – 3 months in total.

- [] never away or not at all
- [] less than one month
- [] between 1 – 3 months
- [] between 3 – 5 months
- [] between 5 – 7 months
- [] more than 7 months
- [] not applicable

11. Has this pattern of absence been different from other years?

[] yes [] no [] uncertain

12. Approximately how long has your partner been in fly-in/fly-out employment

13. How long do you want your partner to continue in fly-in/fly-out employment

- [] less than 1 year
- [] between 1 - 2 years
- [] between 2 - 3 years
- [] between 3 - 4 years
- [] between 4 - 5 years
- [] more than 5 years
- [] unknown

14. How long do you think your partner will continue in fly-in/fly-out employment?

- less than 1 year
 between 1 - 2 years
 between 2 - 3 years
 between 3 - 4 years
 between 4 - 5 years
 more than 5 years
 unknown

15. What is the length of your partner's roster cycle? Please circle whether it is days or weeks.

Home days/weeks Away days/weeks

If the roster is more complex or irregular please describe it below.

16. Have you and your partner experienced different roster cycle lengths?

Yes No

If yes please describe these below

17. What is your preferred roster cycle of those commonly offered by the industry? Please circle whether it is days or weeks

Home days/weeks Away days/weeks

Please explain why you prefer this roster

18. Does your partner travel to and from the mine in your time or in company time?

Travel to site	Own time <input type="checkbox"/>	Company time <input type="checkbox"/>
Travel from site	Own time <input type="checkbox"/>	Company time <input type="checkbox"/>

19. How do you feel about your partner's fly-in/fly-out lifestyle?

1	2	3	4	5
Not enjoyable or rewarding		neutral		Very enjoyable or rewarding

20. Is the fly-in/fly-out lifestyle what you thought it would be?

1	2	3	4	5
Not at all like I expected		neutral		Very much like I expected

How satisfied are you with the following aspects of fly-in/fly-out?

21. Your partner's current roster cycle?

1	2	3	4	5
Not satisfied		neutral		Very satisfied

22. Support provided by the company to enable your partner to attend to non-work issues (e.g. family or personal issues)?

1	2	3	4	5
Not satisfied		neutral		Very satisfied

23. Availability of communication from site to your family?

1	2	3	4	5
Not satisfied		neutral		Very satisfied

24. The impact of fly-in/fly-out employment on your family members?

1	2	3	4	5
no benefit negative impact		neutral		a lot of benefit positive impact

Please provide a list of any other aspects of fly-in/fly-out employment that you are satisfied with.

Please provide a list of any other aspects of fly-in/fly-out employment that you are **not** satisfied with.

25. Has your partner worked for a mining company in a non-FIFO capacity?

Yes [] No []

If yes, please mark which type of employment you prefer for your partner.

FIFO [] Non FIFO []

Please explain your preference

Please feel free to add any other relevant comments about your partner's employment in the mining industry

Thank you for your time and for completing this survey.

If you have any questions concerning the study please contact Mrs Anne Sibbel on [redacted] or Dr Elizabeth Kaczmarek on [redacted]

Appendix C

Employee Letter

Dear Sir/Madam

This letter is to invite you to participate in a project which is being conducted by me, Anne Sibbel, a Doctor of Philosophy student at Edith Cowan University. My interest in this area is a result of being married to a mining employee for more than 30 years. I have lived in a number of mining towns and have also been the “at home” partner while my husband was in fly-in/fly-out employment.

The study is investigating the well-being of fly-in/fly-out mining employees and their partners. It is being supervised by Dr Elizabeth Kaczmarek and has been approved by the Edith Cowan University Ethics Committee.

In the long run I hope that it will assist with the planning and provision of services for mining employees and their families.

If you agree to participate you are asked to complete four questionnaires if you have a partner or 2 questionnaires if you are single, about you, your work and your family. They are expected to take about 30 minutes to complete. You may choose not to answer any questions you don't want to and you are welcome to stop or withdraw at any time you wish.

In addition, **some** employees and their partners will be invited to take part in individual interviews. During the interview you will have the opportunity to discuss the impact of fly-in/fly-out mining employment on your lifestyle and your family. This interview will last about an hour.

Your participation in this project is voluntary and the information gathered will be treated in the strictest of confidence. Any reports which result from this study will only discuss overall results and individuals will **not** be identified in any way whatsoever.

If you would like to participate please fill out the consent form as well as the questionnaires and return them in the reply paid envelope as soon as possible.

If you have any questions about the project you can contact me on [REDACTED], or Dr Elizabeth Kaczmarek on (08) 6304 5193. If you have any concerns about the project or would like to talk to an independent person you can contact Professor Alison Garton on (08) 6304 5110.

Please keep this letter for your information.

I really appreciate your help to make this study possible. **Thank you.**

Yours sincerely

Anne Sibbel
Date

Partner Letter

Dear Sir/Madam

This letter is to invite you to participate in a project which is investigating the well-being of fly-in/fly-out mining employees and their partners. This project is being conducted by me, Anne Sibbel, a Doctor of Philosophy, (Community Psychology) student at Edith Cowan University. My interest in this area is a result of being married to a mining employee for more than 30 years. I have lived in a number of mining towns and have also been the “at home” partner while my husband was in fly-in/fly-out employment.

The project is being supervised by Dr Elizabeth Kaczmarek and has been approved by the Edith Cowan University Ethics Committee. In the long run I hope that it will assist with the planning and provision of services for mining employees and their families.

Your partner agreed to take part in this study and completed his questionnaires on site, and gave permission for me to send you this invitation to also be part of this study.

If you agree to participate you are asked to complete the four enclosed questionnaires about you, your work and your family. They are expected to take about 30 minutes to complete. You may choose not to answer any questions you don't want to and you are welcome to stop or withdraw at any time you wish.

In addition, **some** employees and their partners will be invited to take part in individual interviews. During the interview you will have the opportunity to discuss the impact of mining employment on your lifestyle and your family. This interview will last about an hour.

Your participation in this project is voluntary and the information gathered will be treated in the strictest of confidence. Any reports which result from this study will only discuss overall results and individuals will **not** be identified in any way whatsoever.

If you would like to participate please fill out the consent form as well as the questionnaires and return them in the reply paid envelope as soon as possible. If you do not want to participate can you please return all of the questionnaires in the reply paid envelope.

If you have any questions about the project you can contact me on [REDACTED] If you have any concerns about the project or would like to talk to an independent person you can contact Professor Alison Garton on (08) 6304 5110.

Please keep this letter for your information.

I really appreciate your help to make this study possible. **Thank you.**

Yours sincerely

Anne Sibbel
Date

Employee and Partner Consent Form

Consent Form

The Psychosocial Wellbeing of Western Australian Mining Employees, their Partners and Families

I _____ have read the information provided with this consent form and any questions I have asked have been answered to my satisfaction.

I agree to participate in the activities associated with this research and understand that I can withdraw my consent at any time.

I agree that the information gathered during this project may be published provided I am not identified in any way.

If you are also willing to interviewed as part of the project please tick this box []

If you would like me to send you a summary of the findings when the study is complete, please tick this box []

Signed _____

Date _____

Name (Print) _____

Phone _____

Address _____

If you require further information about this project please contact Anne Sibbel () or Dr Elizabeth Kaczmarek (08) 6304 51930 at Edith Cowan University. If you wish to contact someone who is independent of the project please contact Professor Alison Garton on 08 6304 5110.

Thank you very much for helping to make this study possible.

Appendix D
Key Variables in Analysis Tables

Abbreviation	Variable
Employee	Employee Group
Partner	Partner Group
Lghq	General Health Questionnaire
Das	Total DAS score
Dasi	Sub-scale of the DAS
Dasii	Sub-scale of the DAS
Dasiii	Sub-scale of the DAS
Dasiv	Sub-scale of the DAS
fadd1	Problem Solving sub-scale of the FAD
fadd2	Communication sub-scale of the FAD
fadd3	Roles sub-scale of the FAD
fadd4	Affective Responsiveness sub-scale of the FAD
fadd5	Affective Involvement sub-scale of the FAD
fadd6	Behaviour Control sub-scale of the FAD
Genfun	General Functioning sub-scale of the FAD

Independent Samples *t* tests

Independent samples *t* tests were performed comparing the FIFO Employee group with the Partner group on:

1. psychological wellbeing (GHQ 12)
2. relationship wellbeing on the subscales of the Dyadic Adjustment Scale (DAS)
3. perceptions of family function (FAD)

GHQ 12 and DAS

Group Statistics

	Employee or partner	N	Mean	Std. Deviation	Std. Error Mean
dass	Employee	58	111.7069	20.11372	2.64106
	Partner	32	112.0313	20.06680	3.54734
dasi	Employee	58	48.1034	8.78533	1.15357
	Partner	32	48.6563	9.37605	1.65747
dasiv	Employee	58	15.3103	4.85295	.63722
	Partner	32	15.3125	5.81121	1.02729
dasiii	Employee	58	8.7586	2.75497	.36174
	Partner	32	9.2500	2.47569	.43764
dasii	Employee	58	39.5345	6.49484	.85281
	Partner	32	38.8125	6.06650	1.07242
lghq	Employee	88	9.7614	4.03147	.42976
	Partner	32	11.5313	5.11786	.90472

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
dass	Equal variances assumed	.004	.950	-.073	88	.942	-.32435	4.42556	-9.11922	8.47051
	Equal variances not assumed			-.073	64.169	.942	-.32435	4.42254	-9.15894	8.51023
dasi	Equal variances assumed	.345	.559	-.279	88	.781	-.55280	1.98140	-4.49041	3.38480
	Equal variances not assumed			-.274	60.576	.785	-.55280	2.01939	-4.59139	3.48578
dasiv	Equal variances assumed	1.222	.272	-.002	88	.999	-.00216	1.14743	-2.28243	2.27812
	Equal variances not assumed			-.002	55.015	.999	-.00216	1.20887	-2.42477	2.42046
dasiii	Equal variances assumed	.088	.767	-.839	88	.404	-.49138	.58574	-1.65541	.67265
	Equal variances not assumed			-.865	70.047	.390	-.49138	.56780	-1.62380	.64104
dasii	Equal variances assumed	.745	.391	.517	88	.607	.72198	1.39771	-2.05568	3.49964
	Equal variances not assumed			.527	67.848	.600	.72198	1.37017	-2.01226	3.45623
lghq	Equal variances assumed	1.957	.164	-1.974	118	.051	-1.76989	.89659	-3.54537	.00560
	Equal variances not assumed			-1.767	45.738	.084	-1.76989	1.00160	-3.78632	.24655

FAD

Group Statistics

	Employee or partner	N	Mean	Std. Deviation	Std. Error Mean
fadd1	Employee	61	1.9672	.35463	.04541
	Partner	30	2.0222	.34110	.06228
fadd2	Employee	61	2.0619	.42915	.05495
	Partner	30	2.0741	.36367	.06640
fadd3	Employee	61	2.1803	.32924	.04216
	Partner	30	2.2212	.45341	.08278
fadd4	Employee	61	2.0574	.49337	.06317
	Partner	30	1.8722	.58507	.10682
fadd5	Employee	61	2.0468	.36767	.04708
	Partner	30	2.0524	.48115	.08785
fadd6	Employee	61	1.9016	.35665	.04566
	Partner	30	1.8444	.41121	.07508
genfun	Employee	61	1.8046	.39991	.05120
	Partner	30	1.7722	.54003	.09860

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
fadd1	Equal variances assumed	.333	.565	-.704	89	.483	-.05501	.07811	-.21021	.10019
	Equal variances not assumed			-.714	59.852	.478	-.05501	.07707	-.20918	.09916
fadd2	Equal variances assumed	1.183	.280	-.133	89	.894	-.01214	.09120	-.19335	.16906
	Equal variances not assumed			-.141	67.109	.888	-.01214	.08618	-.18416	.15987
fadd3	Equal variances assumed	.787	.377	-.490	89	.625	-.04088	.08346	-.20671	.12494
	Equal variances not assumed			-.440	44.543	.662	-.04088	.09290	-.22804	.14627
fadd4	Equal variances assumed	1.510	.222	1.582	89	.117	.18515	.11707	-.04747	.41778
	Equal variances not assumed			1.492	49.882	.142	.18515	.12410	-.06412	.43443
fadd5	Equal variances assumed	3.667	.059	-.061	89	.952	-.00554	.09101	-.18638	.17529
	Equal variances not assumed			-.056	46.207	.956	-.00554	.09966	-.20613	.19505
fadd6	Equal variances assumed	.380	.539	.683	89	.496	.05719	.08369	-.10910	.22349
	Equal variances not assumed			.651	51.050	.518	.05719	.08787	-.11921	.23360
genfun	Equal variances assumed	2.233	.139	.323	89	.748	.03242	.10043	-.16714	.23198
	Equal variances not assumed			.292	45.164	.772	.03242	.11110	-.19132	.25616

Kruskal-Wallis Chi Square Approximations

Kruskal Wallis tests were performed to determine:

1. the impact of family type on Employees psychological wellbeing as assessed by the GHQ 12. Family types were classified into the categories of *single*, *couples with no children*, *couples with children*.

Kruskal-Wallis Test

Ranks^a

	fampcoll	N	Mean Rank
lghq	1.00	17	43.21
	2.00	16	31.78
	3.00	43	39.14
	Total	76	

a. Employee or partner = Employee

fampcoll

1 = single employees

2 = couples with no children

3 = Couples with children

Test Statistics^{a,b,c}

	lghq
Chi-Square	2.309
df	2
Asymp. Sig.	.315

a. Kruskal Wallis Test

b. Grouping Variable: fampcoll

c. Employee or partner = Employee

2. The impact of time away on Employee and Partner psychological wellbeing as measured by the GHQ 12. Current Employee roster cycles were classified according to time away; *6 or fewer days away, 7 to 13 days away, 14 or more days away.*

Employee psychological wellbeing and time away

Ranks^a

	rostercoll	N	Mean Rank
lghq	1.00	32	40.73
	2.00	45	47.52
	3.00	11	43.09
	Total	88	

a. Employee or partner = Employee

rostercoll

1 = Away 7 to 13 days

2 = Away 14 days or more

3 = Away < 6 days

Test Statistics^{a,b,c}

	lghq
Chi-Square	1.369
df	2
Asymp. Sig.	.504

a. Kruskal Wallis Test

b. Grouping Variable: rostercoll

c. Employee or partner = Employee

Partner psychological wellbeing and time away

Ranks^a

	rostercoll	N	Mean Rank
lghq	1.00	11	14.59
	2.00	18	18.69
	3.00	3	10.33
	Total	32	

a. Employee or partner = Partner

rostercoll

1 = Away 7 to 13 days

2 = Away 14 days or more

3 = Away < 6 days

Test Statistics^{a,b,c}

	lghq
Chi-Square	2.760
df	2
Asymp. Sig.	.252

a. Kruskal Wallis Test

b. Grouping Variable: rostercoll

c. Employee or partner = Partner

3. The impact of time away on Employee and Partner relationship satisfaction as measured by the DAS. Current Employee roster cycles were classified according to time away; *6 or fewer days away, 7 to 13 days away, 14 or more days away.*

Employee relationship satisfaction and time away

Ranks^a

	rostercoll	N	Mean Rank
dasii	9/5,8/6,7/7	18	25.92
	2/1,3/1	31	31.79
	5/2,4/3	9	28.78
	Total	58	
dasiii	9/5,8/6,7/7	18	23.47
	2/1,3/1	31	34.32
	5/2,4/3	9	24.94
	Total	58	
dasiv	9/5,8/6,7/7	18	25.39
	2/1,3/1	31	32.69
	5/2,4/3	9	26.72
	Total	58	
dasi	9/5,8/6,7/7	18	28.00
	2/1,3/1	31	30.82
	5/2,4/3	9	27.94
	Total	58	
dass	9/5,8/6,7/7	18	25.94
	2/1,3/1	31	32.18
	5/2,4/3	9	27.39
	Total	58	

a. Employee or partner = Employee

Test Statistics^{a,b,c}

	dasii	dasiii	dasiv	dasi	dass
Chi-Square	1.404	5.598	2.431	.411	1.720
df	2	2	2	2	2
Asymp. Sig.	.496	.061	.297	.814	.423

a. Kruskal Wallis Test

b. Grouping Variable: rostercoll

c. Employee or partner = Employee

Partner relationship satisfaction and time away

Ranks^a

	rostercoll	N	Mean Rank
dasii	9/5,8/6,7/7	11	16.00
	2/1,3/1	18	16.64
	5/2,4/3	3	17.50
	Total	32	
dasiii	9/5,8/6,7/7	11	14.73
	2/1,3/1	18	17.56
	5/2,4/3	3	16.67
	Total	32	
dasiv	9/5,8/6,7/7	11	13.82
	2/1,3/1	18	18.33
	5/2,4/3	3	15.33
	Total	32	
dasi	9/5,8/6,7/7	11	15.41
	2/1,3/1	18	17.31
	5/2,4/3	3	15.67
	Total	32	
dass	9/5,8/6,7/7	11	15.09
	2/1,3/1	18	17.50
	5/2,4/3	3	15.67
	Total	32	

a. Employee or partner = Partner

Test Statistics^{a,b,c}

	dasii	dasiii	dasiv	dasi	dass
Chi-Square	.070	.644	1.642	.306	.478
df	2	2	2	2	2
Asymp. Sig.	.966	.725	.440	.858	.788

a. Kruskal Wallis Test

b. Grouping Variable: rostercoll

c. Employee or partner = Partner

4. The impact of time away on Employee and Partner perceptions of family functioning as measured by the FAD. Current Employee roster cycles were classified according to time away; *6 or fewer days away, 7 to 13 days away, 14 or more days away.*

Employee perceptions of family functioning and time away

Ranks^a

	rostercoll	N	Mean Rank
fadd4	9/5,8/6,7/7	18	29.67
	2/1,3/1	34	32.68
	5/2,4/3	9	27.33
	Total	61	
genfun	9/5,8/6,7/7	18	30.28
	2/1,3/1	34	32.72
	5/2,4/3	9	25.94
	Total	61	
fadd3	9/5,8/6,7/7	18	30.08
	2/1,3/1	34	33.40
	5/2,4/3	9	23.78
	Total	61	
fadd5	9/5,8/6,7/7	18	34.94
	2/1,3/1	34	29.90
	5/2,4/3	9	27.28
	Total	61	
fadd6	9/5,8/6,7/7	18	33.64
	2/1,3/1	34	31.59
	5/2,4/3	9	23.50
	Total	61	
fadd1	9/5,8/6,7/7	18	32.28
	2/1,3/1	34	29.22
	5/2,4/3	9	35.17
	Total	61	
fadd2	9/5,8/6,7/7	18	33.11
	2/1,3/1	34	31.10
	5/2,4/3	9	26.39
	Total	61	

a. Employee or partner = Employee

Test Statistics^{a,b,c}

	fadd4	genfun	fadd3	fadd5	fadd6	fadd1	fadd2
Chi-Square	.799	1.091	2.180	1.482	2.084	.965	.872
df	2	2	2	2	2	2	2
Asymp. Sig.	.671	.579	.336	.477	.353	.617	.647

a. Kruskal Wallis Test

b. Grouping Variable: rostercoll

c. Employee or partner = Employee

Partner perceptions of family functioning and time away

Ranks^a

	rostercoll	N	Mean Rank
fadd4	9/5,8/6,7/7	10	17.05
	2/1,3/1	17	14.32
	5/2,4/3	3	17.00
	Total	30	
genfun	9/5,8/6,7/7	10	14.20
	2/1,3/1	17	16.15
	5/2,4/3	3	16.17
	Total	30	
fadd3	9/5,8/6,7/7	10	16.05
	2/1,3/1	17	15.15
	5/2,4/3	3	15.67
	Total	30	
fadd5	9/5,8/6,7/7	10	15.10
	2/1,3/1	17	15.03
	5/2,4/3	3	19.50
	Total	30	
fadd6	9/5,8/6,7/7	10	17.25
	2/1,3/1	17	15.03
	5/2,4/3	3	12.33
	Total	30	
fadd1	9/5,8/6,7/7	10	17.15
	2/1,3/1	17	14.53
	5/2,4/3	3	15.50
	Total	30	
fadd2	9/5,8/6,7/7	10	15.50
	2/1,3/1	17	14.94
	5/2,4/3	3	18.67
	Total	30	

a. Employee or partner = Partner

Test Statistics^{a,b,c}

	fadd4	genfun	fadd3	fadd5	fadd6	fadd1	fadd2
Chi-Square	.710	.329	.068	.699	.841	.592	.463
df	2	2	2	2	2	2	2
Asymp. Sig.	.701	.848	.967	.705	.657	.744	.793

a. Kruskal Wallis Test

b. Grouping Variable: rostercoll

c. Employee or partner = Partner

Mann-Whitney U Tests

Mann Whitney U tests were performed to determine the impact of family type on:

1. Partner psychological wellbeing as assessed by the GHQ 12. Family types were classified into the categories of *couples with no children*, *couples with children*.

Mann-Whitney Test

Ranks^a

fampcoll	N	Mean Rank	Sum of Ranks
lghq couple NK	8	13.06	104.50
nuc & blended	23	17.02	391.50
Total	31		

a. Employee or partner = Partner

Test Statistics^{b,c}

	lghq
Mann-Whitney U	68.500
Wilcoxon W	104.500
Z	-1.065
Asymp. Sig. (2-tailed)	.287
Exact Sig. [2*(1-tailed Sig.)]	.295 ^a

a. Not corrected for ties.

b. Grouping Variable: fampcoll

c. Employee or partner = Partner

1 no children
with children

2. Employee relationship satisfaction as assessed by the DAS. Family types were classified into the categories of *couples with no children*, *couples with children*.

Ranks^a

fampcoll	N	Mean Rank	Sum of Ranks
dasii couple NK	14	34.14	478.00
nuc & blended	42	26.62	1118.00
Total	56		
dasiii couple NK	14	31.25	437.50
nuc & blended	42	27.58	1158.50
Total	56		
dasiv couple NK	14	34.25	479.50
nuc & blended	42	26.58	1116.50
Total	56		
dasi couple NK	14	34.00	476.00
nuc & blended	42	26.67	1120.00
Total	56		
dass couple NK	14	34.54	483.50
nuc & blended	42	26.49	1112.50
Total	56		

a. Employee or partner = Employee

Test Statistics^{a,b}

	dasii	dasiii	dasiv	dasi	dass
Mann-Whitney U	215.000	255.500	213.500	217.000	209.500
Wilcoxon W	1118.000	1158.500	1116.500	1120.000	1112.500
Z	-1.499	-.736	-1.527	-1.461	-1.600
Asymp. Sig. (2-tailed)	.134	.461	.127	.144	.110

a. Grouping Variable: fampcoll

b. Employee or partner = Employee

fampcoll

couple NK = couples with no children

nuc & blended = couples with children

3. Partner relationship satisfaction as assessed by the DAS. Family types were classified into the categories of *couples with no children*, *couples with children*.

Ranks^a

fampcoll		N	Mean Rank	Sum of Ranks
dasii	couple NK	8	18.06	144.50
	nuc & blended	23	15.28	351.50
	Total	31		
dasiii	couple NK	8	20.25	162.00
	nuc & blended	23	14.52	334.00
	Total	31		
dasiv	couple NK	8	17.81	142.50
	nuc & blended	23	15.37	353.50
	Total	31		
dasi	couple NK	8	20.13	161.00
	nuc & blended	23	14.57	335.00
	Total	31		
dass	couple NK	8	19.94	159.50
	nuc & blended	23	14.63	336.50
	Total	31		

a. Employee or partner = Partner

Test Statistics^{b,c}

	dasii	dasiii	dasiv	dasi	dass
Mann-Whitney U	75.500	58.000	77.500	59.000	60.500
Wilcoxon W	351.500	334.000	353.500	335.000	336.500
Z	-.747	-1.560	-.657	-1.492	-1.424
Asymp. Sig. (2-tailed)	.455	.119	.511	.136	.154
Exact Sig. [2*(1-tailed Sig.)]	.464 ^a	.132 ^a	.520 ^a	.145 ^a	.158 ^a

a. Not corrected for ties.

b. Grouping Variable: fampcoll

c. Employee or partner = Partner

Appendix E
Key Informants and Interview Schedules

Table 25

Demographic Profiles of Key Informants in Qualitative Phase

Informant	Gender	Age (Years)	Years FIFO	Family Profile	Occupation
FIFO					
Employees					
Sam	Male	23	3	Single	Driller's offsider
Brad	Male	23	0.6	Partner, no children	Plant operator
Charlie	Male	24	1.5	Partner, no children	Machinery operator
Sandy	Male	33	11	Wife, no children	Underground operator
Gary	Male	34	11	Wife, 1 child, 3 months	Mining Engineer
Kate	Female	31	4.5	Husband, 1 child, 3 years	Mining Supervisor
John	Male	36	11	Wife, 2 children 2, 3 years	Underground Jumbo operator, team leader
Colin	Male	34	7	Wife, 3 children, 9,7,1 years	Underground shift boss
Cleve	Male	44	6	Wife, 2 children, 15.5, 13 years	Manager
Aaron	Male	56	7	Wife, 2 children, 18,13 years	Geologist
Walter	Male	46	16	Partner, blended family, 3 children, 19,18, 17, 2 grandchildren	Mining supervisor
Keith	Male	42	2	Divorced, 1 Child, 16	Dump truck driver
Sandra	Female	35	6	Single	Mining engineer
Anthea	Female	32	13	Partner, no children	Administration

Hannah	Female	40	10	Divorced	officer Occupational health and safety officer
Geoff	Male	37	4	Divorced/couple	Human resources officer
Andrew	Male	36	14	Wife, 2 children, 12, 7, 4	Mining manager
Partners					
Elizabeth	Female	23	0.6	Couple, no children	Public relations officer
Ruth	Female	21	1.5	Couple, no children	Government officer
Neroli	Female	30	5.5	Couple, no children	
Barbara	Female	28	8	Husband, 1 child, 3 months	Homemaker
Edward	Male	33	4.5	Wife, 1 child, 3 years	Part-time student/ homemaker
Beth	Female	29	12	Husband, 2 children, 2, 3.5	Homemaker
Kara	Female	33	4	Husband, 2 children, 5,7	Small business owner
Kath	Female	39	8	Husband, 3 children, 9,7,1	Homemaker
Judith	Female	46	6	Husband, 2 children, 15.5,13	Student/self- employed
Marnie	Female	53	11	Husband, 2 children, 18,13	Legal Officer
Heather	Female	38	3	Partner, blended family, 3 children, 19,18,17, 2 grandchildren	Student/homemaker

Interview Questions: FIFO Employees

1. How long have you been in FIFO employment?
2. How long would you like to have FIFO employment?
3. How long do you expect to have FIFO employment?
4. What is your current roster?
 - 4.1. Which other rosters have you experienced?
 - 4.2. Which roster do you prefer? Why?
5. Tell me about how you made the decision to undertake FIFO employment?
6. In your view how does the FIFO lifestyle impact on you as an individual and on your family as a whole?

Prompts

What aspects have a positive impact?

What aspects have a negative impact?

7. In your view how does your FIFO employment affect your relationship?

Prompts

Which aspects have a positive impact?

Which aspects which have a negative impact?

8. In your view how does your FIFO employment affect your children?

Prompts

Which aspects have a positive impact?

Which aspects which have a negative impact?

9. What aspects of FIFO could be changed to make it a different experience for you, your partner and/or your family?

Prompts

Family changes

Employer changes

10. What advice would you give to someone considering FIFO employment?
11. Are there any other comments you would like to make about the FIFO lifestyle?

Interview Questions: FIFO Partners

12. How long has your partner had FIFO employment?
13. How long would you like your partner to have FIFO employment?
14. How long do you expect your partner to have FIFO employment?
15. What is your partner's current roster?
 - 15.1. Which other rosters have you experienced?
 - 15.2. Which roster do you prefer? Why?
16. Tell me about how you made the decision to undertake FIFO employment?
17. In your view how does the FIFO lifestyle impact on you as an individual and on your family as a whole?

Prompts

What aspects have a positive impact?

What aspects have a negative impact?

18. In your view how does your partner's FIFO employment affect your relationship?

Prompts

Which aspects have a positive impact?

Which aspects which have a negative impact?

19. In your view how does your partner's FIFO employment affect your children?

Prompts

Which aspects have a positive impact?

Which aspects which have a negative impact?

20. What aspects of FIFO could be changed to make it a different experience for you, your partner and/or your family?

Prompts

Family changes

Employer changes

21. What advice would you give to someone considering FIFO employment?
22. Are there any other comments you would like to make about the FIFO lifestyle?