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The psychological wellbeing of women operating mining machinery in a fly-in fly-out capacity.

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The Psychological Wellbeing of Women Operating Mining Machinery in a Fly-in Fly-out Capacity.

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This thesis is presented in fulfillment of the requirements for the degree of a Masters of Psychology.

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Abstract

The present study aimed to address the gap in the current mining research by investigating women's experiences of working in the mining industry in a "blue-collar" work role and the impact of fly-in fly-out (FIFO) mining on their wellbeing. An Interpretative Phenomenological Approach (IPA) was used as a framework to explore the experiences of 19 female machine operators through in-depth interviewing at one mineral mine site in Queensland, Australia. IPA analysis revealed three themes as identified by the participants. The first theme described how *workplace barriers to job progression* were salient issues for the women, particularly in respect to discrimination from male supervisors and hematite restrictions unique to this mine. The second theme titled, s*uspension of short term living for long term gain* resulted in women putting their home responsibilities and relationships on hold. However, women with children in the study were able to describe how they could manage their family and work responsibilities with the aid of a significant other. *Adaptation to the lifestyle* was the third theme and women were also able to utilise adaptation and coping mechanisms to manage the discrimination and obtain a sense of belonging. As a part of adapting to the FIFO lifestyle, the women spoke of the need for time out for solitude as a response to living and working in close proximity to colleagues and partners. Further research exploring women's capacity to juggle child and family needs with FIFO is suggested.

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Acknowledgements

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Capacity.

Literature Review

Research within the mineral mining industry has recently expanded to
investigate how to attract women to the resource sector and retain them once
employed in this area (Chamber of Minerals and Energy Western Australia, 2008;
Office for Women & Minerals Council of Australia, 2007; Pirotta, 2007). Due to
Australia's thriving resources industry and the scarcity of skilled labour in the first
decade of the 21st Century, women have become a potential source of untapped
labour. According to the Australian Bureau of Statistics, women constitute around
15% of the total mining industry workforce (ABS, 2006b). These low numbers
provide impetus for the mining industry to focus on increasing women's participation
in the sector to enable access to a wider pool of workers. Thus, mining councils and
Government Departments have commissioned individuals and organisations to
identify current and future strategies for the minerals industry to recruit and retain
women to the sector (Chamber of Minerals and Energy Western Australia, 2008;
Office for Women & Minerals Council of Australia, 2007). It is estimated that a high
percentage of new positions within the mining sector will be engaged in fly-in fly-out
(FIFO) arrangements (CMEWA, 2011). It is difficult to accurately approximate how
many mining employees around Australia are involved in FIFO operations currently
(Catchpole & Gafforini, 2011). However, a recent report published by the Chamber
of Minerals and Energy of Western Australia (CMEWA) found that the demand for
FIFO employees will peak at around 30,000 in 2012, remaining at 16,500 by 2015
(CMEWA, 2011).

Although FIFO employment has been used in the minerals sector since the
1980s (Gillies et al., 1997), little research has historically been produced exploring the
potential psychosocial impacts of the FIFO lifestyle on female employees. The little
research that does exist has predominantly focussed on professional women (e.g.,
engineers, geologists and metallurgists) as opposed to 'low' or semi-skilled workers,
even though equal numbers of women are employed in both professional and non-
professional positions within the mining sector (ABS, 2006). At the present moment,
no research paper has been published exploring the psychosocial impacts of FIFO
employment on exclusively female "blue-collar" mining employees. Therefore,

relatively little is known about the potential psychosocial effects that impact on women spending extended periods away from their home working in an isolated, male-dominated environment. Thus, the aim of the following research paper is to explore what, if any impacts FIFO employment may have on this particular group so that mining companies and Government Departments can make informed decisions when recruiting and retaining women and developing policies around women in the sector.

Fly-in, Fly-out Mining

Employment within the mining industry typically includes FIFO employment and residential based employment or drive-in, drive out (DIDO). Mining employees working in a 'residential' capacity live and work in the same region as the mine (Storey, 2001). Alternatively, FIFO is often defined as "all employment in which the work is so isolated from the workers' homes that food and accommodation are provided for them at the work site, and rosters are established whereby employees spend a fixed number of days at the site, followed by a fixed number of days at home." (Shrimpton & Storey, 2001, p.2). Employees typically drive or fly from a home base located in a large city or large established mining town to the mine location which incorporates both the mine site and the village (Gillies, Wu, & Jones, 1997). FIFO is also commonly referred to as Long Distance Commuting (LDC) or mine site based employment (Shrimpton & Storey, 1989). Rotation rosters for FIFO employees vary depending on the individual mine or position held within the company. For example, employees working during the construction phase of a mine tend to work the longest rosters while professional office-based employees work the shortest. Rosters generally vary from five days on (on site at the mine) and two days off (at home), to 13 weeks on and four weeks off, with combinations in between.

FIFO: The Preferred Option

With the rising number of companies choosing FIFO practices over residential, research has been undertaken to determine the reasons why companies prefer the FIFO option (Department of Mines, 1991; Storey, 2001). A survey was conducted in 1991 to determine the major reasons mining companies chose FIFO operations as opposed to residential (Department of Mines). The results indicated that the main

motivation behind the companies' decision to adopt FIFO practices was economic, based on the isolation of the mine (44%) and the typically short life of projects (31%).

Storey (2001) found similar results in his research investigating factors that inhibit a company's decision to build new towns. Storey found that isolation posed a challenge for a mining company due to the cost and complexity involved in constructing a mining town in remote and often harsh locations. Specifically, factors that impede developing new towns included:

- "Cost of building and operating new resource towns;
- Absence of government financial support for new town development;
- Longer lead-time for new town approvals and construction;
- Environmental implications of new town construction;
- Administrative implications of managing a town in addition to a mine; and
- Increased costs associated with town closure, once resource exhausted or no longer economically viable." (p.136)

Another inhibitory factor for companies to invest in FIFO operations is the relatively short life span of many new mines (Storey, 2001). An improvement in technology and working practices has lead to an increase in productivity and reduced the life of many mines. In addition, with an increase in gold prices, previously unviable mines with relatively small gold deposits in isolated locations have become feasible. Gold production in Western Australia (WA) rose from 11.2 tonnes in 1980 to 146.6 tonnes in 1989 and many of these new operations were constructed with three to five years of reserves. FIFO arrangements have generally been viewed by companies to be a more cost effective development option as opposed to building whole new communities.

Employees themselves are also showing a preference for FIFO as opposed to residential. Australia's population prefers to live in highly urbanised coastal areas, with over half of Australia's population living in five large cities located on the coast (Hogan & Berry, 2000). In addition to high concentrations of residents in urban areas, more people are choosing to move from regional and remote areas of Australia to live in the larger cities. From 1991 to 2001, regional areas experienced a net migration loss of eight percent of their population to urban locales (Garnaut, Connell, Lindsay, & Rodriguez, 2001). People's preference for coastal living coupled with migration from regional and remote areas present difficulties for mining companies in attracting

and retaining both skilled and unskilled employees to isolated sites. However, despite mining companies and employees' preference for FIFO schedules, there are psychosocial challenges inherent in FIFO employment that are not well understood (Keown, 2005; Gallegos, 2006; Watts, 2004).

Blue-collar Work

Mining has historically been a male-dominated workplace comprised mainly of men in blue-collar employment (Peetz & Murray, 2010). Blue-collar occupations are those categorised in the Australia and New Zealand Standard Classification of Occupations (ANZSCO) (ABS, 2006a) as technicians and trades workers, machinery operators and drivers and labourers. Research exploring the psychosocial impacts of blue-collar workers has typically compared them with white-collar employees to find differences between the two types of occupation in relation to psychological wellbeing (Lehmann, Burkert, Daig, Glaesmar, & Brahler, 2011; Melamed, Ben-Avi, Luz, & Green, 1995; Wright, Bengtsson, & Frankenburg, 1994). Findings have demonstrated that blue-collar workers report more distress arising from their work environment when compared to white-collar personnel.

A study conducted in Stockholm compared the work environment in a factory between women and men with blue-collar and white-collar workers (Wright, et al., 1994). Participants included 761 men, 377 women, 701 white-collar and 437 blue-collar workers and the different groups were compared in regards to physical work environment, psychological stress, job satisfaction, medical symptoms and quality of life.

Wright, et al., (1994) found that overall, blue-collar workers compared to white collar workers reported more psychological stress, less stimulation and involvement, more monotonous work, less pleasure at work, fewer training opportunities, inadequate education and fewer possibilities for development, less influence on one's job and less satisfaction with the total life situation, particularly work and economy. The results were broken down further into female white-collar versus female blue-collar workers in regards to workplace satisfaction. Psychological stress was significantly higher in the blue-collar population in regards to work obstacles, incompatible demands and work regulation. The female blue-collar personnel also reported more health hazard worries and musculo-skeletal problems compared to female white-collar employees.

Psychological stress arising from monotonous work environments has been associated with blue-collar occupations in numerous studies (de Jonge et al., 2001; Kass, Vodanovich, & Callender, 2001; Lehmann, et al., 2011). Work monotony can arise due to either undertaking repetitive tasks and or work underload. Repetitive work can be characterised as discrete sets of work activities repeated in the same order, while work underload involves vigilance, watch keeping, monitoring, inspection or guarding that demands attention but provides little stimulation causing boredom or monotony. An Israeli study involving 885 male and 393 female blue-collar workers determined that subjective work monotony was related to lower job satisfaction and short-cycle repetitive work was significantly linked with psychological distress (Melamed, et al., 1995). Subjective monotony was assessed through the Job Description Index (Smith, Kendall, & Hulin, 1969) and psychological distress included measures of somatic complaints, anxiety, irritability and depression.

Research in other work arrangements demonstrates that blue-collar workers face unique psychosocial challenges compared to white-collar employees (Lehmann, et al., 2011; Melamed, et al., 1995; Wright, et al., 1994). Moreover, women in blue-collar occupations encounter discrete difficulties associated with their employment when compared to women employed in professional roles (Wright, et al., 1994). Thus, it is worthwhile exploring the issues that impact on women in blue-collar FIFO arrangements, as their experiences are expected to be distinct from professional women.

Psychosocial Impacts of the FIFO Lifestyle on Employees

A pool of research exists that focuses on the impacts of FIFO on mining personnel (Beach, Brereton, & Cliff, 2003; Gallegos, 2006; Gent, 2004; Parmenter & Love, 2007; Watts, 2004). However, the vast bulk of research has focussed predominantly on male workers, their partners and families (Clifford, 2009; Keown, 2005; Sibbel, 2010). Although women working FIFO are often included in the research, their numbers represent a very small part of the findings (Parmenter & Love, 2007). Thus, it is not known from the research whether women are affected in a similar manner to men.

Most of the studies investigating employee satisfaction with the FIFO lifestyle originated in the oil and gas industry and focussed on offshore employees and their families where women were typically not employed in the mining industry (see Lewis,

1988; Morrice, Taylor, Clark, & McCann, 1985; Parkes & Clark, 1997; Solheim, 1988). More recently, the focus has turned towards FIFO arrangements in the Australian mineral mining industry and research, mainly from the states of Queensland and Western Australia has appeared (Beach, et al., 2003; Gallegos, 2006; Gent, 2004; Parmenter & Love, 2007; Watts, 2004). The bulk of these studies explore issues associated with the attraction and retention of people in FIFO employment. A small part of this research has sought to explore how the lifestyle and aspects of the work (for example, rosters and shifts) impact on psychosocial wellbeing of personnel and their families and how they adjust to the lifestyle (Clifford, 2009; Kaczmarek & Sibbel, 2008; Parmenter & Love, 2007). Although once again female employees do not form a significant part of the participant base of these studies.

Work schedules

Work schedules in the mining sector typically comprise of 12 hour work days for all employees and night and day shift work for those involved in production and some maintenance roles. The main difference between FIFO and residential employment with respect to work schedules is that FIFO employees are required to sleep on-site in the village, as opposed to returning to their own home as is the case with residential employment (Clifford, 2009; Department of Natural Resources and Mines, 2001; Keown, 2005; Watts, 2004). Sleeping on site can provide unique difficulties for employees and has the potential to affect their quality of sleep due historically to the use of outside toileting facilities at some camps and unfamiliar sleeping environments. Studies in this area have compared the impact of work schedules on the health and wellbeing of FIFO and residential employees (Clifford, 2009; Keown, 2005).

A study comparing the relationship between work practices and the health and psychological wellbeing of male workers in the Western Australia mining industry across work type (resident and FIFO employees) was conducted by Keown (2005). Semi-structured interviews were conducted with 235 male residential and FIFO employees and Social Health and Wellbeing (SHW) and Psychosocial Health and Wellbeing (PHW) surveys were completed by 510 male employees. The surveys considered general health, psychological distress, sleep disturbance, chronic fatigue, social functioning, social and domestic satisfaction and interference, work-family balance and social support.

Keown (2005) reported that a number of differences between the health and wellbeing of FIFO and residential employees were evident. Compared to residential employees, FIFO personnel reported higher levels of sleep problems and higher levels of interference from irregular work schedules on their social and domestic life. Alternatively, more effective coping styles such as active coping; positive reframing and planning responses were utilised more frequently by FIFO employees when compared to residential workers and FIFO employees were more likely to relate better physical health. Thus, suggesting that there are positive and negative aspects to both types of working arrangements. However, the results are based on self-report by workers and their partners and do not provide an objective measurement of health and psychological wellbeing.

An investigation exploring the long and short-term impacts of FIFO and extended working hours on employees and their partners was conducted using cortisol levels of FIFO employees to provide a more objective measurement of stress (Clifford, 2009). The project involved two studies; the first study surveyed 19 residential, 132 FIFO employees and 64 partners using two questionnaires developed by the researcher, titled Employee Questionnaire and Partner Questionnaire. The measurement tools were designed to assess positive and negative impacts of FIFO employment. The first study sought to compare the health and well-being of residential and FIFO employees. Study two examined the impacts of FIFO and extended working hours on FIFO employees and their partners through the use of diaries and saliva samples to measure cortisol levels.

Clifford's (2009) questionnaires demonstrated that FIFO employees and their partners did not report high stress levels, poor relationship quality or poor health behaviours when compared to residential mining employees. Moreover, cortisol levels demonstrated that FIFO employees were in the normal range throughout the testing period. However, Clifford did report that there was a small sample of FIFO employees and their partners who were highly dissatisfied with FIFO employment. Dissatisfied participants were more likely to describe long and compressed rosters which contributed to poor relationship quality, high stress levels and low levels of social support. Although this study provides important information regarding the psychosocial wellbeing of FIFO employees, there were a couple of limitations to the study that could affect the results. Specifically, the validity and reliability of the questionnaire was not known as it was an instrument designed by the researcher.

Additionally, the low numbers of residential workers may not have provided representative sample of residential employment.

Although there is only a small number of studies exploring the effect of work schedules on FIFO employees, the studies (Clifford, 2009; Keown, 2005) have demonstrated that personnel encounter unique employment challenges. Specifically, the potential of irregular schedules to affect home life, relationships and create sleep disturbances. Conversely, FIFO employees appeared to utilise positive coping strategies to contend with the lifestyle and reported better health when compared to residential employees. However, it does need to be acknowledged that the experiences of FIFO work schedules, as reported apply to male employees and that little is known about female employees. Keown's study employed only male participants, while 13% of Clifford's mining personnel participants were female.

Family factors

Research exploring how the FIFO lifestyle impacts on an employees' partner and family has also been conducted (Gallegos, 2006; Kaczmarek & Sibbel, 2008; Sibbel, 2010; Watts, 2004). Both positive and negative impacts of FIFO on family functioning have been identified. The challenges created by the FIFO lifestyle include the effects of changing roles and responsibilities within the family unit and emotional distress due to separation. Alternatively, for a number of relationships, the time spent apart lead to a strengthening of their relationship and FIFO allowed the potential to establish a family home in a preferred location with access to services and education (Gallegos, 2006).

Research has demonstrated that stress can be placed on the family unit due to changing parental roles when one partner is involved in FIFO employment (Kaczmarek & Sibbel, 2008; Watts, 2004). A recent study exploring the effect of frequent and extended father absences from the family unit on 30 children and their mothers' psychological wellbeing was conducted by Kaczmarek and Sibbel (2008).

The results from Kaczmarek and Sibbel's (2008) study demonstrated that FIFO employment was not associated with poorer mental health in children as measured by the Children's Depression Inventory (Kovacs, 1992), the Revised Children's Manifest Anxiety Scale (Reynolds & Richmond, 2000) and the McMaster Family Assessment Device (FAD) (Epstein, Baldwin, & Bishop, 1983) compared to

children from military families and children in the community. However, the mothers whose partners were involved in FIFO or the military had significantly higher scores on the communication subscale in the FAD in comparison to the community group. In addition, scores on the FAD subscales of affective involvement and behaviour control were significantly higher in the FIFO group compared to the community sample. Thus, for females whose partner is employed in FIFO, there appears to be some stressors placed on the participants in regards to family functioning.

Overall, Kaczmarek and Sibbel (2008) demonstrated that FIFO families appear to draw on protective factors to alleviate the stressors that may arise from frequent and extended father absences. However, more research is needed to explore what social and/or familial factors may be the most protective.

A study that also explored the notion of changing roles for FIFO families was conducted by Watts (2004) in a study of 139 FIFO employees and their families in Western Australia. Watts found that family members who believed strongly in traditional male/female roles appeared to have difficulty accepting role changes necessitated by the absences of a FIFO partner and the potential for resentment and relationship disharmony was more likely. Watts found that some participants working away felt a personal devaluing within the family unit if they thought their role had been taken over by another.

The impact of changing roles on the family unit was also explored in a project to identify the potential early parenting challenges for families involved in a FIFO lifestyle (Gallegos, 2006). Gallegos interviewed 32 couples, while focusing on the transitions families experienced when the working partner leaves and returns to the family as part of the FIFO cycle. The results revealed that if parents have differing values and beliefs concerning child rearing, for example, behaviour management, the frequently changing roles of the parents within their family settings could lead to inconsistencies and confusion within the family.

The studies highlighted above reveal the potential for role uncertainty and discrepancies for FIFO families. Moreover, problems could become exacerbated if the family holds traditional values in relation to role definition or if parents held differing values and beliefs concerning child rearing.

Despite the accumulation of evidence relating to the effects of FIFO employment on roles and responsibilities within the family, more theoretical

frameworks are needed to provide an understanding of the FIFO lifestyle. A recent study by Sibbel (2010) attempted to develop theoretical underpinnings to shed more understanding on the impacts of FIFO employment on the wellbeing of mining employees and their families by using a Grounded Theory (Glaser & Strauss, 1967) approach. A mixed methods design was utilised incorporating the General Health Questionnaire 12 (Goldberg & Williams, 1991), the Dyadic Adjustment Scale (Spanier, 2001) and the Family Assessment Device (Epstein, et al., 1983) with 90 FIFO employees and 32 partners, while interviews were conducted with 28 employees and 12 partners.

Results from Sibbel's (2010) study showed no significant difference between FIFO families when compared with community norms on any of the measures. However, during the interviews, participants revealed both positive and negative issues associated with the lifestyle but informed decisions were usually made by ensuring "the benefits outweigh the costs". That is, advantages and disadvantages associated with the FIFO lifestyle were explored by participants in relation to family resources and financial gain before committing to FIFO employment.

Through the use of a Grounded Theory approach (Glaser & Strauss, 1967), Sibbel (2010) was able to explore work-family facilitation, specifically, the "…interface between work and home lives and the resulting impacts on individual, relational and family wellbeing" (p.88). However, there is one consideration when extrapolating Sibbel's results to other FIFO families. The participants volunteered to be interviewed and therefore may be more articulate in regards to communication and decision-making in comparison to other FIFO families. Therefore, more research is warranted to test the above theories with a larger sample size.

The FIFO research exploring psychosocial impacts has also demonstrated that extended separation of the FIFO employee from loved ones generally leads to the experience of loneliness (Gallegos, 2006; Pattenden, 1998; Venables, Beach, & Brereton, 2002; Watts, 2004). Watts reported that "Being separated from the principal partner, and the family home unit in some cases had an extremely negative effect on the emotions of either or both partners and family members." (2004, p.65). The sense of isolation and loneliness was associated with depression in Watt's study. However, it is worth noting that Watts study did not use any psychometric instruments to measure depression in participants, nor was a causal link found between the FIFO lifestyle and depression.

Despite the difficulties for FIFO families around the frequent absences of FIFO employees, there are also reports in the literature that being separated from the principal partner can lead to positive outcomes (Watts, 2004). For some employees and their partners, the FIFO lifestyle was seen as an opportunity to develop personal interests and time for their own pursuits. That is, "despite the enforced nature of their time apart, some interviewees remarked that it was something that they grew to appreciate and look forward to." (p. 63). Some interviewees identified a strengthening in their partnerships and relationships following commencing the FIFO lifestyle (Watts, 2004).

 Other positive aspects of the FIFO lifestyle for families included the financial benefits, the separation between work and home life, opportunities to change employers with minimum disruption to the family, large periods of time away from work to spend with family or pursue other interests, and greater access to educational and health facilities that are on offer in the larger cities for their families (Gallegos 2006). However, satisfaction was more likely if families were able to access family and friends and other social supports while their partner was away.

Relations with co-workers

When working within the relatively close quarters of a mine site with a FIFO camp, the relationships that develop between co-workers have been reported as an important aspect of the FIFO experience (Beach, et al., 2003; Gillies, et al., 1997; Parmenter & Love, 2007; Watts, 2004). The importance of close relationships between colleagues working in FIFO surroundings was a major finding in Watts (2004) study. Participants described how relationships with co-workers "…would act as a buffer at times against the strangeness or loneliness of the FIFO lifestyle some workers felt initially" (p.59).

Parmenter and Love (2007) conducted a study with Indigenous employees looking into the impacts of the FIFO lifestyle. The study involved a survey of 89 indigenous participants followed by 54 semi-structured interviews. Participants in the study stressed the importance of a workplace culture that fosters relationships between colleagues. In particular, employees valued the opportunity to form new relationships that inevitably arose when working and living with the same individuals. Another positive attribute identified by participants was the substantial informal support and mentorship provided by co-workers.

It would appear that the research suggests that the close community living inherent in FIFO employment has the potential to aid the psychosocial wellbeing of FIFO employees. That is, the social support from colleagues provided a safeguard against the loneliness and isolation experienced by some employees.

The literature reviewed to date provides valuable information about the potential psychosocial impacts of FIFO on employees and their families. Studies have demonstrated that there are unique challenges and rewards for those working in a FIFO capacity. However, one of the key limitations in this research is the gender imbalance that exists in regards to FIFO employees. By and large the studies include only male workers, which can be expected given that more males are employed in the industry. However, it is not known if the results of the studies represent accurately female employee perspectives.

Women in Mining

With the increased need to attract people to the mining sector, researchers have begun to turn their focus on women in the resource sector (AusIMM, 2009; CSRM, 2006; Pattenden, 1998; Pirotta, 2007). However, the research base is small and the major focus in recent years has been on how to attract and retain women in the mining industry as opposed to identifying the psychosocial impacts the lifestyle may have on female employees and their families. Furthermore, research investigating women's experiences of FIFO employment is limited, despite its growing popularity as a practice. Consequently, to gain appreciation of the psychosocial impacts experienced by women in the industry there is a need to review the literature that has examined the psychosocial issues encountered by women working in all sectors of the mining industry in addition to those working FIFO. Although the research does not strictly explore issues women in FIFO employment may encounter it never the less gives an appreciation of the challenges associated with working in mining for women.

Mining has traditionally been the domain of men and thus, women working in mining are typically working in male dominated environments. Therefore, women are not only dealing with the challenges inherent in the mining lifestyle but also have to contend with a workplace that has been shown to be at times exclusionary of women (Eveline, Booth, & Chadwick, 1988; Pattenden, 1998; Steed & Sinclair, 2000; Yount, 1991).

The research exploring the psychosocial impacts of women working in the mining industry can be grouped into five themes. These include in order of frequency the following; concerns with discrimination and harassment, gender relations, difficulties balancing family and work responsibilities, professional development and lastly, the advantages of mining as identified by the women (AusIMM, 2009; CSRM, 2006; Eveline, et al., 1988; Gibson & Scoble, 2004; Pattenden, 1998; Yount, 1991).

Sexual discrimination and harassment

Numerous national and international studies, have identified that sexual discrimination and harassment is a major concern for women working in the mineral mining sector (AusIMM, 2009; CSRM, 2006; Eveline, et al., 1988; Gibson & Scoble, 2004; Pattenden, 1998). According to the Australian Human Rights Commission (2012), "sex discrimination is when a person is treated less favourably than a person of the opposite sex would be treated in the same or similar circumstances." While "Sexual harassment is any unwelcome sexual behaviour which is likely to offend, humiliate or intimidate." The following research demonstrates that sexual discrimination and harassment have shown to impact on both professional and non-professional women.

In a landmark study investigating gender issues in mining, Eveline, Booth and Chadwick (1988) examined the implication of the introduction of the Equal Employment Opportunity (EEO) principles at a Diamond mine in Western Australia four years after it was introduced nationally. Eveline et al., interviewed 32 females employed in blue collar employment at a single mine in Western Australia. The authors reported that 90% of participants had experienced some form of gender-based discrimination and 66% currently believed they were experiencing discrimination (Eveline, et al., 1988). A high percentage of participants (78%) thought they stood out as a minority in the workplace and thus, came under greater scrutiny if they had difficulties within the workplace. Moreover, a quarter of the females interviewed desired more support for women, however they requested that support occur "unobtrusively" so as not to upset their male co-workers due to the belief that affirmative action threatened their relationships with men. In addition, the majority of women reported incidents of sexual harassment and struggled to deal with it when it occurred. The participants reported that they felt unable to speak out for fear of being

singled out and being exposed to antagonism from some of the men. However, there was no objective data, such as observations to confirm the women's views.

Thus, Eveline and Booth (1988) discovered that sexual discrimination and harassment were a major concern for a sample of female blue-collar workers in a coal mine in Western Australia. This is despite the introduction of the EEO Act four years prior.

A more recent study incorporated surveys and open-ended interviews to identify barriers to employment for professional women in the mining industry (Pattenden, 1998). The 'Working in Mining' surveys included 106 women and 72 men, while the interviews comprised 109 women and 49 men recruited from 24 residential and FIFO based resource companies in Western Australia, Queensland, New South Wales and Victoria. From the survey, participants identified the following factors that inhibit female participation in the Australian minerals industry (reported from highest frequency to lowest): (1) remote environments, (2) the "old boys" network dominates employment, (3) physical conditions of work unattractive to women, (4) stereotyping of mining as a "man's job", (5) social isolation for females and (6) lifestyle incompatible with raising a family.

The findings from the interviews revealed that participants had difficulty in adapting to the work culture and experienced harassment and discrimination despite EEO policies being implemented at the mines (Pattenden, 1998). While attempting to adapt to the work place, participants described a 'sink or swim' culture present at many mine sites. Pattenden argued that the sink or swim culture was due to the demands placed on workers by the nature of the mining industry. Demands include the "remote lifestyle, the isolation from one's support networks of friends and family, the dislocation of fly-in-fly-out, coupled with the long hours and the high degree of personal responsibility carried by many mining professionals…" (p. 22). Pattenden further explained that this culture may breed intolerance of perceived weakness or sensitivity on the part of male and female colleagues alike. This in turn had the potential to exclude those who are perceived as weaker and may result in isolation, harassment or discrimination.

In regards to harassment, discrimination and equal employment opportunity, Pattenden (1998) found "That harassment and discrimination remain a significant problem within the minerals industry across professions" (p.9). The women in her study described how they were accused of taking men's jobs and of being unreliable

because they would inevitably leave the industry to have children. For some women, this led to personal and professional isolation. Thus, women reported downplaying their femininity to 'fit in' and decrease unwanted attention. Another finding reported by participants was "That EEO policies and procedures are frequently poorly promulgated throughout organisations. Once in place, organisations fail to monitor their effectiveness" (p.9). Pattenden's (1998) research demonstrated that despite EEO policies, barriers exist for women participating in the mining sector, particularly in regards to sexual discrimination and harassment.

A further survey exploring the low participation of professional women in the mining industry also found discrimination and harassment to be a major psychosocial impact for women in the mining industry (AusIMM, 2009). The Gender Pay Equity and Work Practices Survey, which included both quantitative and qualitative components, was completed by over 700 professionals employed in a residential or FIFO capacity in the mineral sector, of which 68% were female and 32% were male.

Female and male participants in the AusIMM (2009) survey reported similar barriers for participation of women as those found in the above studies, including sexual harassment and discrimination. In addition, participants believed that those jobs that were considered 'soft', that is, science and research, head office and non-engineering roles, and where women tended to be employed were viewed as less important to the company and paid at a lower rate. The roles described as more important tended to employ mostly men and included engineering and site based roles immediately linked to production. Although this is further evidence that women face discrimination and harassment in the mining workplace, men's experiences were also amalgamated into the findings, thus not providing solely a female perspective.

Discrimination and harassment was further elaborated on in a study investigating the retention of both professional and non-professional indigenous and non-indigenous women in Australia across both residential and FIFO employment within the mining sector (CSRM, 2006). Qualitative interviews, focus groups and a quantitative survey were used to assess women based in four mine sites. The survey was completed by 189 women and interviews and focus groups were conducted with 128 women and 49 men. The research found that the following factors negatively affected the retention of women in the industry: management of female employees, sexual harassment and sexual discrimination. With respect to the management of female employees, each company involved in the study had policies committing to

EEO and workforce diversity (CSRM, 2006). In a similar vein to previous research, the researchers reported that none of the sites were putting a determined effort into policies focussing on managing, attracting and/or retaining female employees.

Sexual harassment and bullying in the CSRM (2006) report took the form of inappropriate comments and displays of sexually offensive material. On a positive note, when incidents were reported, participants felt that site management were responsive. The female participants in the study believed discrimination against women was a serious and systemic issue for career progression and development. Alternatively, the male participants believed gender discrimination was not a considerable issue. Indigenous women reported similar issues to non-indigenous women in the study but described other challenges, including systemic social disadvantage and complex family responsibilities. Moreover, some women reported difficulties with holding authoritative positions over men. However, several indigenous women savoured the opportunity to be a role model for women within the communities, which was a driving force in entering the industry.

Role Congruity Theory

Role Congruity Theory (Eagly & Karau, 2002) may in part explain the prejudice many women experience in relation to working in a mining environment. According to Role Congruity Theory, prejudice arises when one holds a stereotype about a group that is incongruent with the attributes they believe are required for success in a particular role (Eagly & Karau, 2002). Gender role research suggests that society attributes different behavioural characteristics to men and women (Eagly & Karau, 2002; Heilman, 2001). Women are typically viewed as being more socially oriented and perceived as being kind, dependent and nurturing (Schein, 2001). Alternatively, men are assumed to behave in a task-oriented manner and are typically seen as being strong, dominant and independent (Eagly & Karau, 2002; Schein, 2001). Thus, when women are employed in a male oriented workplace, where the environment is perceived to support male traits, such as strength and bravery, women are perceived as incongruent with this environment. This incongruity may lead to women being stereotyped as incompetent in their role and result in discrimination.

Sexual discrimination and harassment appear to be unique challenges for women working in the mining industry. The research investigating the psychosocial impacts that women in mining may encounter has found sexual discrimination and

sexual harassment to be a consistent concern for women in the mining sector for over 20 years (CSRM, 2006; Eveline, et al., 1988; Pattenden, 1998). Based on the research, it would appear that although mining companies have policies committed to EEO, no other policies supporting the participation of women in the industry were reported, suggesting the mining companies are not putting a concerted effort into attracting and retaining women to the industry. However, this needs further investigation.

Unfortunately, Pattenden's (1998), AusIMM's (2009) and CSRM's (2006) research included male participants in their findings, which does not provide a solely female perspective on the issues women believe they face. Moreover, with the exception of Eveline and Booth (1988) and CSRM's (2006) studies, the majority of the research focuses on professional women only. Lastly, none of the studies draw on theory to help contextualise the findings or provide a theoretical framework to explain why discrimination and harassment may exist for women in the mining sector.

Gender relations

There are a handful of studies exploring the impact of gender relations on women in the mining sector (Eveline, et al., 1988; Tallichet, 1995; Yount, 1991). "Gender relations refer to a complex system of personal and social relations of domination and power through which women and men are socially created and maintained and through which they gain access to power and material resources or are allocated status within society" (International Fund for Agricultural Development, 2000, p.4). In addition, male-dominated environments comprised of blue-collar employment are typically characterised as masculine environments comprising sexual prowess, bravery, physical strength and emotional restraint (Lucas & Steimel, 2009).

The studies described below are international studies conducted in the United States and explore the effect of gender relations on females employed in blue-collar occupations in the coal sector.

Yount (1991) found that blue collar workers employed as labourers also contend with sexual harassment and stereotypes in the coal mining sector and employ gender-role adaptations as strategies to contend with the discrimination. These adaptations involved efforts to establish social identities to manage the relationships that they encountered whilst working in male dominated mining environments.

Yount (1991) conducted in-depth interviews with 10 male supervisors, 25 male miners and 37 female miners and completed 44 hours of observations at the coal site. The researcher noted that due to the importance placed on production and teamwork, the most important criteria for acceptance included an individual's competence and enthusiasm for the work. Ostracism and isolation were likely to occur if any miner was viewed as an inefficient worker or perceived as an unreliable team player. However, the importance placed on team work conflicted with the general view held by the men that female workers were impediments to production, safety and morale (Yount, 1991). Consistent with Role Congruity Theory, men generally characterized women as 'inept' with machinery, physically incapable, highly emotional and expectant of men helping them with their work despite observations to the contrary. In line with Pattenden's (1998) findings, female miners seeking acceptance were required to negotiate an identity that decreased their femininity and increased 'traditional miner traits'.

Those women characterised as 'Tomboys' in Yount's (1991) study were the most likely to be accepted by men as miners. 'Tomboys' were those women who centred their "social identities on their status as coal miners and to conscientiously dissociate themselves from the female stereotype" (p. 412). Yount reported that 'Tomboys' were accepted primarily because of their determined enthusiastic approach to work. They tended to be liked as they were perceived as active learners who strove to learn their jobs well. As supervisors assigned workers for training and job progression, they were more likely to choose those who were considered pleasant co-workers, thus Tomboys tended to be chosen compared to other women at the mine. Therefore, being liked by co-workers also contributed to their opportunities for training and promotion. Pleasant interactions involved developing amiable relations using playfulness and a sense of humour, that is, the female participant's ability to joke in a similar fashion to the men. However, according to Yount, sexual banter utilised by the women had the potential to culminate in sexual harassment if men perceived the women as refusing to accept subordination to their male co-workers.

A second international study focussing on semi-skilled employees was conducted by Tallichet (1995). Tallichet found women in blue-collar labouring positions at a coal mine were inhibited in their job progression as a consequence of gender relations operating on site. Interviews were conducted with 17 women and several male miners. The subsequent interview data revealed that sexualization of

work relations and of the workplace acted as a powerful component in ensuring women could not access the higher status positions within the organisation. Tallichet (1995) found that gender differences between the males and females became exaggerated on the mine site, for example, half of the female participants reported an experience of sexual harassment by co-workers or supervisors. The gender demarcation resulted in the men stereotyping women as sexual objects rather than miners who were capable of doing mining work. As a result, there was a perception that the sought after jobs at the mine became gender-typed as men's work and women were not chosen to fill them because of the stereotype that women were incompetent.

Social Closure Theory

Tallichet (1995) used Social Closure Theory (SCT) to explain how sexualisation and stereotyping inhibited women's progression in the workplace. SCT suggests that "a status group creates and preserves its identity and advantages by reserving certain opportunities for members of the group using exclusionary and discriminatory practices" (p. 698). Tallichet argued that the findings reflect how stereotypes and gendered division of labour were used to control women and prevent them from career progression.

Social Identity Theory

Social Identity Theory (SIT) (Tajfel & Turner, 1985) may in part explain Yount's (1991) findings above in relation to women adopting a particular social identity to cope in their environment. SIT posits that individuals define themselves by categorising and comparing themselves to others. That is, individuals perceive similarities between themselves and the 'in-group' and perceive differences between themselves and the 'out group'. Individuals classify themselves in the same social category as a set of individuals who hold a common social identity. SIT is based on norms, beliefs and any other characteristics correlated with the in-group. A sense of self-worth often accompanies identifying with a group but this is affected by whether one is accepted into the group (Stets & Burke, 2000). Thus, a female miner may adopt more masculine traits to receive acceptance which results in feeling more positive about one. Conversely, a woman may distance herself from the 'out group' by separating from the feminine stereotype.

The above studies investigating gender relations in the mining industry have provided an insight into the difficulties women may face when working in male-dominated environments. Furthermore, the research provides a glimpse into the experience of women employed in blue-collar work, but it is a narrow view focussed on gender relations and as such, does not allow a more complete picture of what these women experience. Moreover, none of the above studies focussed on how FIFO employment may impact on participants employed in blue-collar employment.

Balancing family and work responsibilities

 Difficulties with balancing work and family commitments has been identified as a concern for women working in mining (AusIMM, 2009; CSRM, 2006; Gibson & Scoble, 2004; Pattenden, 1998; Steed & Sinclair, 2000). Specific challenges identified by women included difficulties with day care, shift lengths prohibiting quality family time and concerns with leaving work to have children. Participants in the CSRM (2006) study reported that the main reason women left the mining industry was to start a family. Some residential families left the industry and returned home to their urban dwelling in the city in order to improve their quality of life by accessing better health and education services and also to move closer to their family and friends for support.

The difficulty with balancing family and work responsibilities for males has been identified previously in the mining literature (Gallegos, 2006; Sibbel, 2010; Watts, 2004). However, the studies exploring women and their experience of family suggest that the women experience a higher level of difficulty balancing family with work, with some participants reporting that mining is incompatible with starting a family (CSRM, 2006). This area requires further research as the authors did not differentiate the women's experiences according to residential/FIFO employment or by professional/non-professional.

Professional development

Gender differences have also been identified as a barrier to accessing professional development (Gibson & Scoble, 2004; Pattenden, 1998). Professional development was an important area explored by the participants in Pattenden's (1998) study. The interviews and survey results showed that mentors were important in facilitating career progression; however, it was difficult to find competent male mentors to mentor female workers, thus hindering their career progression. One aspect

of the male/ female mentor relationship that women identified as problematic was the expression of paternalism by male colleagues towards their mentees, which was described as potentially detrimental to professional development. Moreover, the female participants described a discrepancy in what was expected from male and female workers, for example, to progress professionally, women believed they "must consistently out-perform their male peers in order to be regarded equally with those male peers, while having less margin for error." (p. 10). Potentially, such perspectives can increase women's stress if they must 'prove' their worth in a male dominated environment.

In line with Pattenden's findings, the AUSIMM (2009) survey reported similar barriers to participation for women in regards to professional development. Participants reported fewer opportunities for networking due to the drinking culture, that is, many networking opportunities arose at establishments where alcohol was consumed. If the women were not invited or did not consume alcohol, their opportunities for networking were diminished. Furthermore, a common complaint made by the women was the lack of female role models available due to the low numbers of females in the industry. This is despite the introduction of the interest group, "Women in Mining and Resources" established in Queensland and Western Australia to cater for women in the industry.

Advantages to mining

Despite the difficulties identified by the women in the above studies, participants were able to identify many positive aspects to their jobs (AusIMM, 2009; CSRM, 2006; Gibson & Scoble, 2004; Pattenden, 1998). Attractions of the mining industry included: the mining lifestyle and a love of the bush, opportunities to work both indoors and out, science driven work environments, an opportunity to make an impact on society, career development and other job-related factors such as acquiring skills and financial incentives.

The above studies pertaining to women in mining add to the small research base exploring women's experience of the mining industry. However, the studies mentioned above in some circumstances amalgamated the experiences of women involved in residential and FIFO employment into one study (AusIMM, 2009; CSRM, 2006; Pattenden, 1998) or focussed on residential employees only (Eveline, et al., 1988; Tallichet, 1995; Yount, 1991). Nevertheless, it is important to consider the

FIFO lifestyle as opposed to residential employment to identify what unique challenges may exist for FIFO women. Therefore, the following three studies identified issues that are unique to FIFO employment.

Women in FIFO Employment

Three studies have been identified in the literature that explore exclusively women's experiences of FIFO employment (Costa, Silva, & Hui, 2006; Pirotta, 2007; Steed & Sinclair, 2000). According to the Australian 2006 census (ABS), women constitute around 15% of the total mining industry workforce, primarily in clerical and administrative roles (72.7%), followed by professional occupations (22.7%), labourers (14.3%), skilled trades (5.5%) and machine operators and drivers (4.3%). Despite the equal number of women employed in professional compared to low and semi-skilled positions in the mining sector, most research has focused on exploring the attraction and retention of professional women in FIFO employment rather than those engaged in semi-skilled work (Pirotta, 2007; Steed & Sinclair, 2000). Two of the studies below focussed on professional women (Pirotta, 2007; Steed & Sinclair, 2000), while one study integrated both professional and non-professional participants' experiences of FIFO employment (Costa, et al., 2006). All the studies grouped their findings into stressors identified by the women and the advantages of the FIFO lifestyle. In addition, two of the studies explored strategies that women utilised in coping with the difficulties identified (Pirotta, 2007; Steed & Sinclair, 2000).

Stressors of the FIFO lifestyle

Steed and Sinclair (2000) explored the stressors professional women experienced working in the mining industry. They included 30 participants employed in both a FIFO and residential capacity. Findings were organised into FIFO related issues and general and gender-related stressors.

In relation to home-life, the women identified FIFO general stressors relating to relationships, career and social life (Steed & Sinclair, 2000). Participants struggled to re-adapt to family life when returning to the home on an irregular roster. Professional development was also problematic owing to a lack of peer support and access to professional resources due to erratic schedules and the inability to commit to community and professional events. The gender related stressors included an inability to have a family, management unwilling to find their spouse a job and difficulties in

finding a partner, as several participants believed men were intimidated by their roster and income.

Stressors in relation to camp life identified by participants arose around working and socialising with the same people (Steed & Sinclair, 2000). Participants explained how they were unable to establish a life away from work due to the lack of privacy. Moreover, the women believed that the institutionalised nature of the camp resulted in a pressure to conform to others. Camp life difficulties in relation to gender stemmed from being a minority group. Participants believed they came under greater scrutiny and felt the need to be aware of how long and where they spoke to men and were exposed to sexist comments and approaches.

A study investigating both professional and non-professional women and their experiences of FIFO employment also found challenges for the women in relation to home and camp life (Costa, et al., 2006). Costa et al study sought to explore two issues; firstly the wellbeing of women working in mining in a FIFO capacity, and secondly, how the mining industry is recruiting and maintaining female employees in FIFO operations. The research methodology involved telephone interviews and questionnaires with three Human Resource superintendents and 16 women who were employed at four mines in the following areas: (a) engineers/geologists (31.5%), (b) health/wellness related positions (12.5%), (c) trades (12.5%), and (d) administrative/financial positions (43.75%).

Costa et al's (2006) study reported similar results to Steed and Sinclair's (2000) with respect to the impact of irregular schedules and camp life. The women also reported missing important family, social and community events due to irregular periods away from home and challenges with privacy restrictions in the village. Costa et al's participants also mentioned an inability to juggle a family and FIFO. However, this finding was not elaborated on in either of the studies, so it is not known if women had children and it was difficult to balance work and family or whether they did not have children as they believed it was not possible while occupied in FIFO employment.

A further finding of Costa et al (2006) that has also been reported in previous studies (Pattenden, 1998) involves mining policy. None of the four mines involved in the study had adopted specific policies aimed at hiring and retaining women, with the exception of maternity leave.

A study investigating the attractions and challenges of both the FIFO lifestyle and working in a male dominated environment was conducted by Pirotta (2007). The research involved qualitative interviews with 20 professional women working in a FIFO capacity. The challenges associated with the FIFO lifestyle were similar to those mentioned previously, with the exception of psychological tolls, such as depression described a factor for some women in the study. The author found that some women reported being depressed which they believed was influenced by the FIFO lifestyle. However, no assessment tools were used to measure depression and causation is difficult to establish in this context. As mentioned in the previous studies, gender related issues were also explored by participants in Pirotta's (2006) study. Additional challenges for the women in this study included a lack of female contact and coping with discrimination and harassment.

Positives of the FIFO lifestyle

The women in all three studies were able to identify the benefits of working in a FIFO capacity within the minerals industry (Costa, et al., 2006; Pirotta, 2007; Steed & Sinclair, 2000). The main advantage to the FIFO lifestyle for the majority of the women was the financial rewards that came with working remotely. Being a minority also had its advantages as women reported that they preferred working in a male dominated environment as men were viewed as less likely to gossip, more task orientated, less political and less likely to focus on interpersonal issues. The extended period off also had its benefits as it gave participants travel opportunities and time to pursue other activities and goals (for example, educational, recreational and cultural). Camp conveniences were also considered a positive as food and accommodation was provided. Thus, the women did not have responsibility for cooking, laundry or cleaning while on site. Lastly, participants discussed gaining a sense of community from the close living inherent in the FIFO lifestyle.

Coping strategies

The participants in Steed and Sinclair's (2000) and Pirotta's (2007) studies identified coping strategies that they employed to help them tolerate the challenges in their workplace. The participants illustrated how they adjusted their behaviour and attitude to work in a male dominated environment. The women argued that they were required to be assertive and confident, work with men's communication styles, accept

the male culture of the mine site and know when to "back down". As described in Pattenden's (1998) study, the women in Pirotta's study reported becoming "one of the boys" and the need to "toughen up" (p. 31), that is, the need for them to act confidently and be assertive in order to adapt and be accepted. This is in line with Social Identity Theory which posits that women adopt more masculine traits in order to be accepted. Additionally, participants placed an emphasis on the importance of social support at the mine site to buffer the negatives inherent in the lifestyle. Participants articulated that "Seeking advice, support and/or protection from family, friends and colleagues…" (p. 30) was a useful coping method.

Social support

A sense of community and a sense of belonging was identified by women employed in a FIFO capacity as an advantage of the lifestyle (Pirotta, 2007; Steed & Sinclair, 2000). Moreover, social support was perceived to be an important coping strategy for some women (Pirotta, 2007). Research investigating women in male dominated environments in alternate employment fields has also reported that social support can be an important adaptive coping mechanism for many females (Richman & vanDellen, 2011). Cultivating a sense of belonging in an environment that generates discrimination can act as a buffer against social identity threat. Social identity threat is "a state of cognitive imbalance in which women's concept of self and expectations for success conflict with primed social stereotypes of low competence at relevant tasks" (Richman & vanDellen, 2011, p. 494). Richman and vanDellen found that women in an identity threatening environment were more likely to experience a sense of inclusiveness if they perceived they had access to a strong supportive social network. Furthermore, Richman, Bennett, Pek, Siegler and Williams (2007) found that individuals who experience social identity threat have better emotional and physical outcomes if they possess social support.

There are very few studies exploring how women experience FIFO employment (Costa, et al., 2006; Pirotta, 2007; Steed & Sinclair, 2000). The few studies that exist have demonstrated that the difficulties identified by women can impact on both their home and work life and include both general and gender-related stressors. However, advantages of the FIFO lifestyle have also been identified. Women have identified that FIFO has enabled them to have extended time off from work thus allowing for a fuller home life. In the work place, FIFO mining is

perceived by women as resulting in a more task oriented workplace due to the predominant male culture of the workplace. Women were able to identify certain strategies that assisted them in coping with both working in a male-dominated environment and the FIFO lifestyle. The studies reported similar impacts as those found for women in the general mining research including; discrimination, harassment, difficulties balancing family and work and advantages to working in the industry. However, unique impacts were discussed by women working FIFO including; maintaining responsibilities at home and the effects of the camp life on women. Most of the FIFO research was focussed on professional women or a mix of residential and FIFO employees. Therefore, it is unknown whether women in blue-collar employment will report similar experiences in regards to FIFO employment or which findings may be specific to this sub-set of respondents.

Overall, the literature review demonstrates that while there are common psychosocial impacts for men and women involved in FIFO employment, there are also unique issues for women in mining. Studies on men in mining have explored the impacts of FIFO on the family and how the work schedule affects workers and their families in detail (Kaczmarek & Sibbel, 2008; Keown, 2005; Sibbel, 2010). In contrast, studies on women in mining have predominantly examined work related barriers for women and the impact of discrimination and harassment (Pattenden, 1998; Pirotta, 2007; Yount, 1991). There are however unique challenges for women working in FIFO environments, namely; camp related issues and home experiences. For example, navigating coming and going into an established household, being separated from family and friends for extended periods, privacy restrictions and a sense of community that can arise when living and working in close quarters.

The mineral resources sector is expected to greatly increase their FIFO personnel in the coming years (CMEWA, 2011). In order to meet production demands, industries have focussed on attracting and retaining women to the sector. However, little is known what psychosocial impacts working away from home for extended periods and living and working in male-dominated environments has on low and semi-skilled female employees. Therefore, the current project aims to identify the unique psychosocial experiences of blue-collar women with the intention of providing direction to those seeking to address any challenges faced by this population.

A qualitative approach will be adopted in the current research due to the exploratory nature of the research topic. In view of the fact that there is currently no

research exploring semi-skilled employees experience of FIFO, a qualitative report allows for broad exploration of the possible issues that may arise during the investigative process. By conducting qualitative interviews, it allows the women to explore and share their experiences rather than the researcher placing expectations on the interviewees.

Research Aims and Objectives

Due to the gap in the mining research looking solely at non-professional women's experience of the FIFO lifestyle, the current research project is focused on female machine operator's experience of the following:

1. What is the experience of being a female blue-collar employee in the mining industry?
2. What is a woman's experience of FIFO as a practice?

The researcher did not have a hypothesis before attempting this research project due to the exploratory nature of the research aims. As the study was exploratory, minimal a priori expectations were developed and the purpose was to develop explanations of this phenomenon from the results. This method is in line with Lincoln and Guba's approach (1985).

Methodology

Conceptual and Theoretical Framework

Interpretivist epistemology

A qualitative approach was adopted to explore individual female mining employees' experiences of their workplace and the implications of their work arrangements on their personal lives. In particular, the research was grounded in an interpretivist epistemology (Crotty, 1998). This approach is phenomenological and assumes that reality is a consequence of the context in which an action occurs and is shaped by the cultural, historical, political, and social norms that operate within that context and time. It is also argued that there is no one true reality, instead there are multiple realities based on individuals' unique understandings and experiences of the world. Thus, by interviewing the women it has the potential to collect a range of perspectives that reflect the unique understandings and experience of working in one particular mining environment. Phenomenological approaches have been utilised in other mining studies enabling a richness of data and a common base from which to compare (Carter & Kaczmarek, 2009; Sibbel, 2010).

Interpretative Phenomenological Analysis

Interpretative Phenomenological Analysis (IPA) was adopted for the current project. Consistent with the interpretivist epistemology, IPA is concerned with attempting to understand the participant's point of view as it is subjectively experienced by individuals within their particular contexts (Cresswell, 2007; Smith, 2003; Smith, Jarman, & Osborn, 1999). Specifically, a phenomenological approach emphasises a person's personal experience of a phenomenon as opposed to an attempt to produce an objective statement of the event or object itself.

IPA also involves critical awareness on the part of the researcher, that is, asking critical questions of the participants such as, what is the participant really trying to say and how do they make sense of their experience (Cresswell, 2003). While IPA acknowledges people as cognitive, linguistic, affective and physical beings with associations between their discourse and their thinking and emotional state, IPA assumes this connection is complex and that at times people are unable to express what they are thinking or to self-disclose. In this way, IPA is influenced by hermeneutics suggesting it is the role of the researcher to understand and interpret the

women's view point and to appreciate the cultural and social forces that may have influenced their outlook (Smith, et al., 1999). Such interpretations are based on the researcher's own conceptions, beliefs, expectations and experiences. Thus, the researcher plays an active role as she/he interprets the participant's meaning.

IPA moves beyond Phenomenology by recognising the researcher within the research and analytic process (Willig, 2001). The analysis is a product of the interactions between the participants and the researcher and is thus phenomenological (participant's account) and interpretative (researcher's interpretations). In this respect, IPA requires reflexivity from the researcher who is expected to explicitly present his or her own perspectives, so as not to contaminate the analysis (Willig, 2001).

In this reflexive vein, I have previously been employed in a FIFO capacity at the particular mine site in the current project and my interest in this area stems from that experience. Although I have not been employed in the particular area of the mine the women are working, there could be a chance that my own experience could create bias when interpreting the data. In order to counter this bias, methodological rigour has been applied throughout the research process.

IPA was chosen as a framework for the current study because of its inductive approach. This study employs a "bottom up" rather than a "top down" approach that is aligned with the data driven approach of IPA (Smith, 2003; Smith, et al., 1999). That is, the inductive process suggests that the themes identified are strongly linked to the data themselves without trying to fit it into a pre-existing coding frame, or the researcher's preconceptions. The aim of the present project was not to test hypotheses or prior assumptions, instead, the study aimed to capture and explore the women's meanings they ascribed to their experiences.

Research Setting

Qualitative research is typically conducted in a natural setting at the site where participants experience the phenomena (Denzin & Lincoln, 2005). The location for the interviews for this study was on a remote FIFO mine site in Queensland, Australia. The mine at the time of the interviews employed just over 950 people and was involved in both mining and processing zinc. Due to its remote site, the whole workforce were involved in flying in and out of this mine, and a small village had been constructed by the company to accommodate the workers about 10 minutes drive from the mine. Roster lengths were different depending on what type of work

employees were involved in, but generally, office workers did five days of day shift at the mine and weekends were at home. Those employees involved in production tended to work rosters that consisted of two weeks at the mine and one week at home and included both day and night shifts.

The mining company was required to enact a Gulf Communities Agreement (GCA) in order to mine on the site. The Agreement is a legally binding contract between the mining company and local indigenous groups who own the land the mine is situated on. The GCA outlines the mine's responsibilities to the indigenous groups, for example, due to the cultural significance of hematite/red ochre to the local indigenous male community members, all female workers were restricted in handling the hematite with their machinery.

The present study attempted to make sense of the meaning women ascribe to their experience of working at a mine in a FIFO capacity by interviewing the employees at their workplace.

Participants

Female truck operators were intentionally recruited to participate in the study due to the higher number of women working in machine operation compared to other areas within the mine, such as tradespersons, whilst fulfilling the criterion of working in a blue-collar capacity.

All the women who were working at the time of the interviews agreed to participate in the study. The study therefore, included 18 female machine operators and one female dispatch operator. All women were involved in a roster where they worked two weeks on and one week off, with the first week consisting of day shifts and the second of night shifts. The women were aged between 22 and 46 years, with a mean age of 29 years. The women had worked in mining from five months to 18 years, with an average of 5.5 years, with 2.5 years' experience at the mine involved in the study. Of the 19 women interviewed, 11 (58%) had partners working with them at the mine, one (5%) had a partner in her hometown and seven (37%) were single. Six women (32%) had children aging in range from three years to 25 years.

Instruments

Demographic questionnaire

A questionnaire was developed to obtain demographic information about the participants (see Appendix A). The questionnaire collected data relating to the participant's experience in mining, roster schedule, age, family composition and role at the mine.

Interview schedule

IPA advocates for greater flexibility in methodology to discover the context surrounding a person's experience of a phenomenon (Smith, et al., 1999). Thus, a semi-structured interview format was used (Appendix B). Specifically, open-ended, broad questions, such as, "Tell me about your experience of being a female employee in the mining industry?" were initially asked of the participants and then refined further with subsequent participants depending on the first interviewees' responses. The main advantage of using this approach, as identified by Banister, Burman, Parker, Taylor, and Tindall (1994) was to provide the opportunity to focus on the subjective meanings of the participants' experiences. A further advantage to using a semi-structured interview is that it provides the researcher with the flexibility to explore both specific issues raised by the participant as well as themes identified during the previous interviews.

Procedure

The study was approved by the Edith Cowan University Human Research Ethics Committee. The Human Resources Manager of the mine then provided a letter of support for the researcher to interview female machine operators on site at the mine. Information sheets (Appendix C) and consent forms (Appendix D) were sent to the mine for distribution.

The interviews took place on site over two weeks in an office within the working environment free from distractions. Purposeful sampling of participants was utilised in the current study through the crew supervisor identifying female machine operators who were willing to speak with the researcher.

Each interview began with the researcher explaining the research project by providing another copy of the information sheet and providing opportunities for the

participants to ask questions to clarify any uncertainties. It was made clear to the women that participation was voluntary and that they were free to withdraw at any time during the interview. Additionally, issues of confidentiality and tape recording of interviews were explained. All workers agreed to participate and were provided with a consent form for their perusal and signature. Before beginning the semi-structured interview, the participant's demographic information was obtained through a questionnaire (Appendix A). The interviews ranged considerably, from 30 to 90 minutes, depending on the women's experiences of the mining industry.

On completion of the interview, participants were thanked and provided with information about the Employee Assistance Provider should they wish to discuss any concerns further.

Data Analysis

The data were analysed using procedures consistent with IPA as described by Smith, Jarman and Osborn, (1999). Inherent within IPA is the ideographic approach, which is concerned with obtaining a detailed picture of the experience of each individual participant as well as an account of what is shared or common among the participant's experiences (Cresswell, 2003; Smith, et al., 1999). Thus, although the primary concern was with the personal understandings and perceptions of the individual, there was also a need to identify one or more themes mutually relevant to all participants so more in depth analyses could occur (Smith, et al., 1999).

It is important that the researcher is familiar with the research data, so all interviews were transcribed verbatim by the researcher and read through at least once. The transcripts were downloaded into NVivo 10 (QSR International Pty Ltd., 2012), a qualitative data management program to allow for easier organisation of the large data sample. Initial thoughts, possible codes and any detail of particular interest within the first transcript was highlighted by the researcher and saved as nodes in NVivo 10. Once the whole transcript had been coded, the derived codes from each interview were examined to determine if any could be grouped together in meaningful ways and saved as common nodes. The common nodes were then used as the basis for possible themes. This process was repeated for each interview transcript, until clusters existed for each participant. Each transcript was treated as a separate experience but the researcher was primed to certain aspects of the data in each new interview because of the preceding transcripts.

All the clusters of themes derived from the transcripts were then examined by the researcher and organised or collapsed into common categories or nodes in N-VIVO 9. Initial categories were broad as it was important that they were relevant to all the participants. Once the themes for each individual were selected, an analysis of the shared themes was undertaken. An examination of the shared themes was enacted by pulling them apart to determine what common sub themes constituted each theme.

The last step in IPA involved exploring patterns and relationships within and between the themes. Time was spent exploring the inter-relationships between the categories by taking different categories in turn and reflecting how they relate to each other and if they conflict, resulting in collapsing or disregarding themes. Diagrams were made of the main themes and their sub-themes to capture the relationships between emergent themes.   Diagrams along with memos of thoughts about the data allowed the researcher to articulate the ideas and identify the relationships between and within the themes.

Methodological Rigour

Reliability and validity are essential considerations for both quantitative and qualitative research (Hesse-Biber & Leavy, 2011). There are a number of established criteria that are associated with rigour of a qualitative study, namely: credibility, transferability and confirmability. To ensure rigour and demonstrate reliability, certain measures were undertaken in the present study.

Credibility

Credibility refers to the extent to which the reported findings are representative of the beliefs or values of the participants as opposed to misinterpretation by the researcher (Lincoln & Guba, 2000). It is generally acknowledged that researcher bias is implicit in qualitative research and is used to aid the researcher in shaping the research appropriately in relation to the purpose of the research project (Mays & Pope, 1995).   However, to minimise bias, certain measures can be taken. It is important to be explicit about inevitable bias and acknowledge and record events, comments or decisions that confirm preconceived ideas or personal values (Miles & Huberman, 1994). A reflective journal was kept by the researcher during the research process to record and monitor reactions to interviews, specific events or situations that may have influenced the researcher and increased bias. A comprehensive audit trail was kept

throughout the research process with the use of memos, accurate transcriptions and notes from interviews.

The main themes were also presented to the participants following the intervention to gauge accuracy in relation to their experiences. All participants agreed that the themes reflected their views. Primary text or direct quotes were also employed in this final research report to complement the quality and 'trustworthiness' of this research (Liamputtong & Ezzy, 2005). Lastly, to ensure credibility throughout the current project, the research findings were compared to previous research in this area in order to assess congruency.

Transferability

Transferability refers to the extent to which the findings are applicable to other settings (Hesse-Biber & Leavy, 2011). Recommendations by Lincoln and Guba (2000) to increase transferability include describing the context of the study in sufficient detail to allow others to evaluate the extent to which the conclusions drawn are transferable to other times, settings, situations and people. Thus, the characteristics of the participants and the mine were included in the present study through the demographic questionnaire and information gathered from the mine. Additionally, the researcher acknowledges that the mine in the present study may have particular characteristics that affect the women's experiences compared to other mine settings.

Representativeness refers to the ability to capture the essence of the phenomenon or situation under investigation in order to improve transferability, with an emphasis on the quality of the data collected as opposed to the number of participants (Hesse-Biber & Leavy, 2011; Morse, 1994). Representativeness can be achieved through data saturation, which occurs when all issues relating to the topic have been raised, and further participants do not identify additional themes (Cresswell, 2003; Hesse-Biber & Leavy, 2011; Morse, 1994). Based on the need for representativeness, the interviewer ensured data saturation was reached before ceasing the interviews.

Confirmability

Finally, confirmability refers to the extent that the conclusions are verifiable by others (Hesse-Biber & Leavy, 2011). To guarantee confirmability in the present study, documentation was kept indicating how the study was designed, data gathered,

analysed and interpreted throughout. Through the use of this audit trail, it is assumed that a researcher conducting the study at the same time and place, and utilising the same methodology would arrive at the same conclusions.

The results from the analysis of the interviews were verified by the participants at the end of the interviews. A list of the main issues were identified by the researcher and presented to the participants to ensure the issues were representative of their experiences. No participants identified any themes as incorrect or missing.

Findings and Interpretations

The aim of the present study was to explore the experiences of female machine operators working in a FIFO capacity at a remote mine site. Three super-ordinate themes were drawn from the analysis: (i) Workplace barriers to job progression, (ii) Suspension of short term living for long term gain and (iii) Adaptation to the lifestyle. The thematic structure of the results is presented in Table 2. Overall, most of the issues to emerge were consistent with the previous literature in this area (CSRM, 2006; Eveline, et al., 1988; Pattenden, 1998; Pirotta, 2007; Tallichet, 1995; Yount, 1991). The predominant themes as experienced by the women were related to living and working on site. The focus on workplace and work environment issues may in part be due to the fact that the research interview occurred onsite as opposed to in the home environment. The following section will present the emergent themes supported by the participant's actual discourse. To increase credibility, the findings will also draw parallels with prior literature relating to this field.

Table 2

Thematic Structure

Super-ordinate Themes	Sub Themes
1. Workplace barriers to job progression	1.1 Monotony
	1.2 Discrimination
2. Suspension of short term living for long term gain	2.1 Long term gains
	2.2 Suspended life
3. Adaptation to the lifestyle	3.1"One of the boys"
	3.2 Getting along
	3.3 Time out

To provide context for the following themes, it is worth noting that at this particular mine there appeared to be a hierarchy with respect to machine operation. Dump trucks were situated at the bottom of the hierarchy and were operated by those viewed as "less skilled" with the machinery. As employees' skills increased, they were invited to operate more difficult machinery such as water carts, which are machines that spray water to keep dust at a minimum. Further up the hierarchy are the

machines that the most skilled employees operate and include machinery used to scrape the pit walls or to load dump trucks, for example, excavators and diggers. Training is required to operate the most skilled machines and while training is provided at the mine site it is dependent on an invitation by supervisors.

Workplace Barriers to Job Progression

The first theme explored workplace barriers that the women experienced. These barriers were described by the women as an obstacle to job progression and were a predominant theme mentioned by all women in the study. Earlier research on women in mining found that multiple barriers within the workplace can impact on women's career prospects and job satisfaction (CSRM, 2006; Pattenden, 1998; Tallichet, 1995).

Two sub-themes emerged that contributed to the participant's experience of workplace barriers: (1) Monotony and (2) Discrimination.

Monotony

Most participants in the current study experienced a sense of monotony and repetition while driving dump trucks, which lead to boredom and a decrease in job satisfaction. The monotony provided the impetus to progress in their career.

The women explained that operating dump trucks was not difficult but soon became tedious due to the repetitive nature of the driving and the conditions present at the mine:

> *The machines aren't hard to drive, there's forward, neutral and reverse, I can steer those trucks easier than my car, it sounds weird but they are a nice truck to drive. I used to be a smoker and I would get up to 3 packets a day because of the boredom of going up and down, especially if you're stuck on one side of the pit and only 2 loaders to go to, it might take you half an hour to 1 hour round trip. It is good money and it is easy money but the monotony gets to you. (Participant 19)*

> *It's not difficult driving a truck it's… I would say it's the easiest money I've ever made in my life to be sitting driving the trucks but it becomes monotonous. (Participant 14)*

> *… truck driving can get boring especially at the moment as we are only allowed to go 20 kilometres an hour 'cause of the road and how bad it is and the jarring, so its really boring. (Participant 11)*

The monotony experienced by the participants described above in relation to operating the dump trucks resulted in a decrease in their job satisfaction:

The worst part about it and I quite enjoy it and I don't mind the early mornings and long hours but the worst is job satisfaction… you drive the truck up and down and it's so boring and you try to do a good job. (Participant 12)

It's boring, its brain dead it's horrible, it's probably the worst job on site, I would say… (Participant 5)

The importance of job satisfaction and career development for women involved in mining has been found to be a key factor in previous studies focussed on attracting and retaining professional women to the mining industry (AusIMM, 2009; CSRM, 2006; Gibson & Scoble, 2004; Pattenden, 1998) and is a potential hazard of blue-collar environments (Fisher, 1993; Melamed, et al., 1995). As reported elsewhere in the literature, high levels of job boredom in the workplace is related to lower job satisfaction and depressiveness (Kass, et al., 2001; Lehmann, et al., 2011).

To counter the monotony, many women strove to progress onto other machinery at the mine, such as excavators or graders, which they believed would provide more variety and a sense of accomplishment that would increase their job satisfaction.

I hate monotony, the excavators are digging benches and faces, scraping walls and loading trucks… I would find something like that more job satisfying, job satisfaction for me; you can see what you are doing and you have to think all the time. Don't get me wrong I try to set myself goals in the trucks on different things, like backing quicker, lining up better. It gets boring. (Participant 19)

The more variety you get the less bored you are... everyone likes a change, the more machines you can operate, the more experience you get. (Participant 17)

Obtaining a sense of satisfaction from driving the more difficult machinery also provided the women with a sense that they were an important part of the team:

…but I would like to get on the excavator and grader, anything where you see that you've achieved something rather than just hauling dirt cause even on the water cart I like it 'cause you can see what you've done or the roller you can see how neat it looks at the end. You get told you've done a good job. (Participant 16)

In summary, the women reported that the repetitive nature of operating the dump trucks lead to boredom and a decrease in job satisfaction. The link between high levels of job boredom and a decrease in job satisfaction has been found in previous research exploring blue-collar workers (Lehmann, et al., 2011). To counter this monotony and improve their job satisfaction, participants strove to advance their job development by seeking experience with the more complex machinery. Moreover, the women believed that operating other machinery would result in a sense of achievement and hence be viewed as more valuable by the team.

Discrimination

Discrimination was an experience shared by a majority of the participants during the interviews. Discrimination in the present study had the effect of limiting the female operators' progression up the hierarchy of machinery. Training was needed to progress to other machinery and the women had to be chosen and invited to complete the training. The other machinery was coveted by all at the mine, thus women were in direct competition with the men.

The participants discussed how machine operation was considered by some men at the mine as being the domain of men only and as such, no place for women:

> *You get a lot of guys, well not a lot that whinge about ladies here you know like they shouldn't be doing this, ladies shouldn't be that, ladies should be in the kitchen. (Participant 1)*

> *There's a few of them that don't agree with women working here, I guess… sometimes when we get trained on other machinery you can tell they don't like us being on machinery 'cause they think its men's work… (Participant 18)*

Specifically, the participants believed that they were viewed as having less ability on the more difficult machinery but were able to drive the '*easier*' or female machinery, as Participant 8 explained, "*Well it's discriminatory, very much so… you look at females on this mine site, in the pit and there's two of us that operate something other than a water cart, a truck or a loader… I don't know, I don't think the men have the confidence that we can actually do it…*"

Eveline and Booth (1988) discussed how the assignment of work roles as either male or female created and maintained divisions between male and female co-workers. This in turn leads to gender stereotyping of certain jobs or machinery as

only suitable for men, while women are only able to operate the 'easier' female machinery. Consequently, the common view held by the dominant sex within their workplace is that women do not have the ability to operate the more difficult machines. As participant 12 described "*I'm lucky I'm not too bad at it. I think it would be a lot worse if you-women have a bad name for not being good truck drivers. They are easy on the gears but they're not as quick, they don't get the trucks in the right spot as easily as the guys. It's a generalisation, not a fact and they tend to be given a hard time, if I was given a hard time I would find it really difficult but I don't.*"

Other studies that have investigated the barriers women face in the mining industry have also reported that discrimination is a key factor faced by many women (CSRM, 2006; Eveline, et al., 1988; Gibson & Scoble, 2004; Pattenden, 1998; Steed & Sinclair, 2000). In particular, it has been concluded that the discrimination participants experienced in the mining sector resulted in women being viewed as less competent than the men (Pattenden, 1998; Steed & Sinclair, 2000). This in turn had implications for career opportunities and development, such as being overlooked for promotions.

In the current study, participants believed that they were not given the training opportunities that were available to the men. Because employees were invited to complete training by male supervisors, the women believed men were favoured over them, as experienced by Participant 6 "*I've gone and spoken to my supervisors about wanting to get onto other machinery… 95% are male that get trained up and pushed through on the equipment.*" Participant 4 believed "*it can be a bit sexist just with regards to, I don't know promotions and that sort of thing*" while others felt a sense of frustration "*I get frustrated and take it out on most of the men and most of them see it, that we should be given a go, there is a real hierarchy and… yeah its frustrating.*"

Some participants referred to a "male mentality" as being responsible for the discrimination they faced in the workplace.

> *I didn't think they thought I couldn't do it cause I could do it and I did do it, it was just the male mentality…men don't like to be showed up and for other people to, well females to, I don't believe, not all men, that's a generalised statement but at that time it was a difficult process. Yes it can be done you just need the opportunity, it's like anything isn't it? (Participant 14)*

> *You know don't expect to get on a digger because you're a female. I don't know it's just the mentality I think old school mentality but you never hear it, you know what I mean? You'd never hear it said and you always hear it denied. (Participant 4)*

A sense of powerlessness permeated many of the participants' dialogue, a belief that they cannot alter their workplace, as participant 13 illustrated, "*I just gotta put up with it. 'Cause you ain't gonna change anything.*" Tallichet (1995) also found that women miners became discouraged when they were unable to acquire the skills that would qualify them for job progression due to inequities in training opportunities.

Role Congruity Theory (Eagly & Karau, 2002) may in part explain the experience of discrimination many of the participants in the current study described in relation to operating the more difficult machinery. As discussed by the women, they tended to be stereotyped as fit for only certain machinery and viewed as unfit and incompetent to drive the more popular machinery; this in turn resulted in discrimination and thus, fewer opportunities for progression.

Hematite Policy

Another aspect of the workplace that the participants experienced as discriminatory was the procedure surrounding the handling of hematite. A procedure unique to the mine in the current study entails the management of a mineral referred to as hematite or red ochre. Hematite is regarded by the Native Title Group, whose land surrounds the mine site, as culturally significant for indigenous men and precludes women from handling the hematite. To provide context for the following theme, the procedure for *Handling of Hematite* mine document is described in Appendix E. As the hematite policy is unique to the mine in the current study, the findings cannot be compared and contrasted to other research in the mining literature.

The procedure for *Handling of Hematite* policy document outlines the prevention of women from working proximal to the hematite. That is, women are prohibited from operating equipment involved in loading or hauling hematite where the equipment is in direct contact with the hematite. Thus, the hematite procedure was viewed as discriminatory by most of the participants in the current study as it affected their opportunities to access the more skilled machinery. Specifically, the hematite procedures impeded the women's access to machinery as elaborated on by Participants 3 and 9 respectively, "*you would have heard about the hematite? So*

you're not allowed on the ground, I got taken off the cable, which is a bit of a bummer, now they've put me on a loader" and *"when there's hematite ___ can't do the clean-up, if there's a rock there she has to get someone else to come and clean it up. If there's too much of it she has to go on the trucks… very restricting."*

In addition, the hematite procedure had implications for long term career opportunities, as Participant 6 identified: *"I think that's why it's hard for them to have too many females training up",* supervisors were less likely to train women on machines that would come into contact with the hematite. If women were using the loader or digger and hematite was exposed it meant lost productivity while women were removed from the machinery and replaced by men.

> *Yeah, at the moment we have had to move girls off our crew because we have had too many girls and they couldn't man the trucks because there was too much hematite. So they had to move girls off the crew. I got a bit cranky about it because I was trying to train up on this machine and you are restricted when you can dig. (Participant 9)*

Many of the participants were excluded from duties when hematite was unearthed in the pit. Participants described feeling like a hindrance as the men were required to work and the women were unable to contribute: *"it restricts production 'cause the girls aren't allowed to go there so I would believe that sometimes the girls feel like a hindrance here because they have to be swapped out of trucks. (Participant 5)"* It also had the effect of contributing to the view described earlier that the women were unfit to drive the machinery.

> *When every digger is digging it (hematite) and we have to sit around and look like we're not doing anything 'cause we can't… the guys come to work and see the girls are sitting and doing nothing and they have to work. They joke, but joking is partly serious isn't it? (Participant 12)*

Participant 15 expressed a view shared by a number of women at the mine in regards to the hematite policy, *"I don't like it... all women can't be around it but I believe that it's an Aboriginal culture and Caucasian women who don't believe in it shouldn't be affected by it."* Some women expressed a belief that a cultural practice they viewed as not relevant shouldn't apply to them as it impeded their ability to work, as stated by Participant 8:

> *…aboriginal culture and that's frustrating as being a white woman I don't see that it (hematite) should affect us white women but it's the law that (mine name) have put in line so we have to follow it. It's restricting because I can't*

jump on my machine now, a clean-up machine because it's all hematite, so I get put back into a truck for 3, 4 months until we are out of the hematite and I'm right to go in again.

The hematite policy also had implications for job security. Some participants described how women were disadvantaged as the hematite restrictions meant fewer women were needed on each crew and thus the women were shuffled between the crews.

It does (impact) in that… there's so much (hematite) at the moment and we have so many girls on our crew that some girls have been moved which I don't want to do as all my friends are on this crew and they are all the friends I have in Queensland. At the moment 5 girls have to go and 2 have gone and the rest of us girls are going 'I wonder if it will be me and will it be today?' (Participant 12)

This had the effect of some participants questioning if this would eventuate in job losses.

Its policy that if they don't have work they can lay you off or send you home without pay, the new AWA so if its all hematite and they cant find you jobs I would rather wash buses but if they cant find you work they can send you home. (Participant 15)

Although hematite affected the participants' job progression, many were aware of the complexity of this issue and that there was little that the mine could do regarding this policy, as acknowledged by Participant 9, "*They have to respect their beliefs so you're caught between a rock and a hard place because you can't dig it or else, if someone sees you, we'll get in trouble, written warnings for it. (Mine name) are reliant on the leases, they can't do anything about it.*"

A number of participants respected the indigenous beliefs concerning the hematite and did not believe they were affected by the restrictions. As expressed by Participant 19, "*because I grew up in the (hometown), I understand it 'cause I grew up with aboriginals. To me it's okay you just don't go near it or cart it. I don't think it's affected me, it's just one of those things it's either there or not. A lot of people have a problem with it.*"

According to the participants in the current study, the hematite restrictions appeared to have a discriminatory effect on their job satisfaction and career progression. That is, the women were removed from the machinery when hematite

was unearthed in the pit and given alternative tasks, resulting in a sense of being an impediment to production. In addition, the participants believed that supervisors were reluctant to provide training opportunities to the women for machinery that came into contact with the hematite.

Suspension of Short Term Living for Long Term Goals

Another prominent experience for the participants in the current study was the suspension of short term living for long term gain. Many held the belief that mining in a FIFO capacity meant foregoing many aspects of their life to reach long term goals. As participant four explained:

> *I think the main reason anyone gets into mining is the money and to set themselves up… and you just think, short term; do this, long term; have my life. (Participant 4)*

Long term gains

As articulated by Participant 16, it was universally acknowledged by participants that their main incentive for working at the mine was financial gain, "*Mining is always about the money I don't think anyone would want to be out here for 2 weeks unless they're getting good money.*" This is consistent with many studies investigating female employees' attraction to working in the industry (Costa, et al., 2006; CSRM, 2006; Gibson & Scoble, 2004; Pattenden, 1998; Pirotta, 2007; Steed & Sinclair, 2000). The women in the present study discussed how the financial gains made through mining allowed them to reach certain goals.

> *C wants to start his own business; we decided that if we can put up with it a bit longer we'll get some money behind us so we can do that. (Participant 12)*

> *Yeah well we wanted to buy a farm when we went back to (home) but… and (partner's name) was going to work down on one of the mines but he has sort of gone off that idea now and thinking maybe some sort of business. (Participant 14)*

> *We needed to get bulk money to get cattle and get everything going, it is a good opportunity, mining, no matter how boring it is. It is hard (working at mine and running a farm) but it's going to be worth it 'cause when everyone else's husband is going to work, my husband is here with my kids. (Participant 11)*

In addition, many participants believed that working in mining was the best avenue to acquire their goals, as discussed by participants two and nine:

> *Yeah pretty good (money), it's better than my previous job, I was just working in town and I found it hard living off my partner's fortnightly income and in the end we didn't have any spending left over and everything that I wanted to buy and what (partner) wanted for himself so I wanted to be one step ahead. (Participant 2)*

> *It was more the money cause when I was on the property I was getting 400 a week and most of the time you would go to the town for the weekend and you would be living from pay check to pay check. Now at the mine you can buy a block, you can buy the car you want. (Participant 9)*

Suspended life

In order to reach these long term goals, participants explained how they suspended or deferred certain aspects of their life to achieve them, as explained by Participant 5, "*...just to work, make money, get to where we are going and then we will start living.*" However, as a consequence of the suspension, participants discussed several impacts on their psychosocial wellbeing.

Participants experienced a suspension in a number of areas of their lives, including: home responsibilities, relationships, important events, starting a family and balancing work and family responsibilities. A number of the women suggested that the FIFO lifestyle made it difficult to manage and maintain responsibilities at home. For example, Participant 4 commented that she could not maintain a domestic life, "*when you want to start your own life, get a house, get a partner and get a house together and start having pets, you can't do that so it's not just mining it's any industry that requires you to be away from home for an extended period of time.*" Another participant described the difficulties when living remote with elderly parents at home:

> *... when my mother, twice she has nearly died and I've had to be flown out, if it's a day when a plane is flying in and out you're fine but if it's on Saturday or Sunday, so you're stuck, you can't just go and get in your car and go, and hey I knew that when I started here... she (mother) has sort of, she supports me but at the same time I call her every night and she gets down - I wish you were here and I miss you. (Participant 6)*

Other responsibilities that became difficult to manage when living away for extended periods included pet ownership, "*I miss my dog the most being out here but*

mum looks after him (Participant 3) and maintaining community responsibilities, "*I don't have time (to do martial arts), it would take too long, I have to catch up with the things I've missed at home. (Participant 15)*

Relationships with friends or family at home were also considered a challenge to maintain while involved in the FIFO lifestyle and often resulted in a suspension of these relationships.

> *People never know when we are home so we don't see a lot of people unless we go to them. (Participant 5)*

> *Well we are going to go back to (home) because we did leave children there with their other parents. It's time to go and spend some time with them. (Participant 14)*

Without the support of family and friends, it had the potential to affect the participant's psychosocial wellbeing:

> *We stay in __ and apart from our friends at work we have got no one there. We stay in motels and hoped to do a lot of travelling but coming from __ we aren't accustomed to the weather and it's hard… I used to struggle, I'm not really close to my family but we have a strong bond and on Christmas and Easter don't talk to me, even when we are in __, I was in the worst mood. (Participant 12)*

Participants eight and seven articulated how the irregular comings and goings involved in the FIFO lifestyle had the potential to cause severance between themselves and others:

> *My friends in town they work during the week so when I fly home they still have to work. (Participant 8)*

> *At home I really only hang around my sister and one of her friends 'cause everyone else is working and they don't have the same money as I do to spend on activities. (Participant 7)*

Maintaining romantic relationships with people at home was also considered a challenge, "*it would be difficult to have a relationship with someone that didn't work out here. You just wouldn't see them. (Participant 7)* The absence has the potential to result in relationship loss, "*I started out here with a partner I actually started and got him a job 4 months after I started, and it was a bit of a killer being away (from him). (Participant 3)*"

Another facet of the participants' lives that was suspended due to the FIFO lifestyle was the ability to participate in important events such as birthdays, parties or special holidays. Inability to attend parties and special events such as Christmas appeared to be more difficult for the younger participants, as Participants 3 and 9 described:

You're out here on your weekends and Christmas and New Year's we miss out on both of them and being young I don't like missing out on partying. So when it's the weekend and your friends ring you up and they are partying and you think you do get to a point where you don't even think it's the weekend anymore. (Participant 3)

It didn't bother me too much except you miss out on too many parties. (Participant 9)

Previous studies researching the effects of the FIFO lifestyle on employees have confirmed that female participants experience a sense of suspension regarding their home life due to the nature of the FIFO roster (Costa, et al., 2006; CSRM, 2006; Pirotta, 2007; Steed & Sinclair, 2000). For example, women discussed how working in a FIFO capacity can make it difficult to establish a regular lifestyle (Costa, et al., 2006), maintain relationships with family and friends at home (Steed & Sinclair, 2000) and commit to community events.

A major life suspension reported by many of the single women in the study was the decision to postpone having a family due to the perception that the FIFO lifestyle would not be compatible with raising a family. This finding contrasts with the literature relating to men's experience of balancing work and family responsibilities (Sibbel, 2010). Male participants typically believed the balance was difficult but could be managed, whereas women in the current study believed FIFO employment was incompatible with raising children and they would need to leave rather than juggle the two.

… just say I got pregnant tomorrow and me and __ would have to make some big changes 'cause I wouldn't want to be at home looking after a kid by myself, while he was way for 2 weeks. (Participant 7)

I'll stay in mining for a while cause I just bought property, I want to get that all sorted but after we get married I'm going to stay a couple of more years cause I want to start a family and I can't stay here working. (Participant 16)

On further exploration, it would appear that many of the participants' views regarding the compatibility of the FIFO lifestyle with raising a family were derived from their colleagues' frustrations with balancing work and a family. As a consequence, participants believed it made the work environment more stressful.

I think it's frustration, you are here for that long, some people have families, I don't know how they manage and they are away for 2 weeks and they get frustrated… it's like, I can feel it in the air sometimes... (Participant 15)

I don't know how anyone can do it for a long period of time and with a family. I couldn't do it, I know a lot of relationships survive like that and they couldn't live together, but I don't think its fair on kids when they don't have a choice. Some miss their families, some couldn't care less. It adds to their stress as well, people with small kids realise they are missing out on so much and all they can do is talk on the phone at night, I think it adds to their stress and it can be a stressful place and end up with a negative attitude towards everything and everyone. (Participant 12)

The potential negative effect of the FIFO lifestyle on children was stressed by a number of participants who had experienced absent parents. As participant 19 stated:

I had both my parents working when I was younger and not so much having them there, don't get me wrong my parents were really good and we are all close, but being babysat and seeing the other side and I don't want to put my kids through that, it wasn't all good, I'd rather be there, to me it helps to know that you can go home to your mum or dad after school and do what you want instead of being told what you have to do. I would never not work but I would do day care, after school care, like family day care. (Participant 19)

The experience of balancing family with the FIFO lifestyle is supported in the literature as a principal challenge for women in mining (Costa, et al., 2006; CSRM, 2006; Gibson & Scoble, 2004; Pirotta, 2007). Most participants believed that children are incompatible with mining, particularly those employed in a FIFO capacity and this view is cited as a major reason why women leave the industry (CSRM, 2006). However, there does not appear to be any mining research exploring how children cope with a mother employed in a FIFO capacity.

In contrast to the views expressed by some women in the study and the findings reported in previous studies that women find it difficult to juggle FIFO and children, several participants in this study offered a different perspective. Women

with children in the current study reported that they were able to balance children with the mining lifestyle. Participant 10 commented that having children did not restrict her employment in mining:

> *In my book, hiring women with young children is no different to hiring men with children. If the man is going to stay home and the women work out here I don't see the difference. I guess HR would look at it on its merits and…no I've never had trouble with the exploration mining, being refused employment because of having young children, I was more likely to encounter it working in town, I actually had one mine job that was very child friendly, I worked Monday to Friday, I was about 3 kilometres from town and I was home every night. It was just outside ___, it was excellent. (Participant 10)*

Many of the mothers expressed the belief that it was feasible with the support of extended family.

> *Yeah so I'd rather be out here, you know I love my kids but my kids grew up practically with my mum and dad since I've been working. I reckon it's alright, doesn't worry me… I like going home but I can only spend 3 days at home with the kids and then I need to come back, enough money spent. (Participant 1)*

However, some participants with children did initially find it difficult to adjust to the separation. However, the perception of coping with the demands of the FIFO lifestyle was enhanced if there appeared to the presence of a consistent adult(s).

> *I didn't handle it for the first couple of years but I guess over time you learn to and like our children don't give us a lot of grief. I would say that my children, I have 2 sons, they don't give me any grief I've had to go back to (home) once for an emergency when my oldest son had a tumour and that had to be removed umm… but apart from that they don't have any hang-ups with me being away, they don't put any pressure on me at all, they never have. They are happy to be with their dad, it's probably hard for you to understand because it is strange but it works really well and we have a love that we share which is really deep and we can cope with the distance. (Participant 14)*

When discussions centred on whether working in a FIFO capacity was a long term option for participants, many clarified that the lifestyle had a specified time limit:

> *I'm not going to do mining for the rest of my life and my partner feels the same, it's a quick fix solution, it's something we can do while we're young to*

get the things we want for later on, get the house and cars for the future to start a family. (Participant 19)

Probably in five to seven years and then we should be out of here. (Participant 5)

Despite making plans to set end dates for their time at the mine, many participants expressed difficulty in giving up the lucrative pay.

I'll stay in the mine for a while, I was only going to come to the mine for two, three years and I don't think I could go back to the money I was on… yeah I don't know. (Participant 9)

Goal setting appeared to be a useful strategy for some participants to ensure their long term goals were obtainable, "*I always make short, medium and long term goals 'cause if you only have long term its hard to reach. (Participant 15)*" As Participant 10 explained, "*I've learned not to plan too far ahead as it doesn't work out that way you need to have some goals but you cant have too rigid plans for the future.*"

Despite the relatively high wages, other participants struggled to manage their short term spending habits in order to save for their long term goals.

We have done a lot of travelling, saved a house deposit and bought a car and saved another house deposit and went on holiday, so three years later we are still saving for a house. The thing I have found is FIFO, you're here for two weeks and you get so frustrated, you have half an hour free a day… you go on a break and think I deserve this and I'm a terrible spender, I blow a lot of it. I think we would have had to work a lot harder for it, at the moment we can save a lot of money but still have a lot to spend but if we stayed home we would have been very dedicated and given up a lot more to do it, it would have been doable. (Participant 12)

You always say "I don't want to go back (to the mine)" but then because I like shopping I look at my spending account and think I have to go back. So money is my motivating factor, you may have figured that out. You earn three or four times what people do in town, and we don't have the living costs out here. (Participant 7)

As Participant 12 further expanded on, getting accustomed to living a certain lifestyle and spending without constraint has the potential to extend the planned time at the mine, "W*e thought it would take 12 months and we've been here for three years.*"

Other researchers (Pirotta, 2007) have also reported participants' experience of finding the lifestyle difficult to maintain but unable to give up the lucrative rates of pay. This notion has been referred to as the 'golden handcuff' syndrome (Gillies, et al., 1997; Keown, 2004; Sibbel, 2001; Watts, 2004).

Adaptation to the Lifestyle

Three psychosocial adaptation strategies were enacted by participants in the current study as a response to the difficulties inherent in the FIFO lifestyle. The first strategy enacted by many of the women involved embracing an identity that would allow them to fit in more readily with the status quo. The second strategy explored the importance of getting along, the need to maintain positive relations with colleagues to progress in the workplace and gain social support and acceptance. Lastly, the women articulated a need for solitude for themselves to cope with the close community living intrinsic in the FIFO lifestyle.

One of the boys

One adaptive strategy the participants employed in response to their experience of sexual discrimination elaborated on earlier was to highlight and or adopt social identities that were more likely to be accepted by the status quo. The social identity that appeared more relevant for the participants in the current study was that of 'one of the boys'.

> *I had no mining experience whatsoever and the guy in HR said I don't know why I should give you a job because it's a 99% male industry and how do you think you would go and I said look I've been in hospitality, I've handled men at their worst so men at a mine site don't bother me. I'm one of the boys anyway. (Participant 16)*

From the women's description, there appeared to be two aspects to the 'one of the boys' social identity. The participants appeared to identify with the status quo and distance themselves from the feminine stereotype. Second, the women expressed a need to be particularly competent as a machine operator, thus proving they were more competent with the machines than the men in order to be accepted.

The women described how they preferred to work with men due to positive male traits, "*I find working with men a lot easier. They don't bitch. They don't really care about relationships with people (Participant 18)",* and the belief that *"on the*

whole I prefer to work amongst men, they are usually easier to get along with, some women are snipey (Participant 10)."

As Social Identity Theory suggests, inherent in a social identity is the identification with the in-group and comparison with those who are labelled the out-group (Tajfel & Turner, 1985). In the present study, men were considered the in-group, while other women the out-group. A number of participants disassociated themselves from the female stereotype by confirming its salience for others.

If you're going to act like a tart or be dumb or use the excuse I'm a female, then they will treat you like, poorly but if you just act normal they're fine. Females out here 'cause there are such a small number of females to men get more attention… But not degrading the other girls but some of them get a bit wrapped up in it maybe. (Participant 7)

I found that women can whinge and bitch, but don't get me wrong men can whinge and bitch too but women are different, I interact with both but I prefer to work with the guys 'cause their not… I'm the type of person that is easy going, I don't like whinges… Some of the girls can be vindictive, not towards me but other people and there isn't need for it, its petty stuff… (Participant 19)

Mm and some of them are quite cliquey; I don't believe they get on the same as the men do. I don't think women are a problem in the workforce as in ummm…what's the word…the women we seem to have here aren't flirty and promiscuous sort of women, they're just sort of here to do a job yeah, I mean relationships come and go with people but they don't seem to be a big problem. Yeah… I can say that the main trouble that we've had have been caused through women. I would think five or two percent of females can be trouble, but men can be too but women go about it a different way... (Participant 14)

The second aspect to 'one of the boys' sub-theme was the importance of being identified as a competent machine operator by supervisors and colleagues. In order to progress, the women believed that they had to demonstrate that they were more competent at their work compared to the men. As male supervisors made the decision regarding training, it was believed that being more competent would lead to being accepted for training and therefore progression opportunities.

I have spoken to another female that has worked here a long time and she said if you work hard and do the job better than everyone else, any guy, then you will get there, eventually you will get there. It's like the old saying that you're… I've seen it pinned up on the back of toilets… a women has to work twice as hard to get the same thing. (Participant 4)

They look at me and say she is small but I can do many things but women in the workforce have to prove themselves much harder than the guys, women have to work twice as hard to get where they want to go to prove they can do the work. (Participant 15)

There were also difficulties with being viewed as too competent. It appeared that it was important to demonstrate competency but it was detrimental to be more competent than their male colleagues:

You know, when the women go there with the blokes they have to work twice as hard they 'gotta prove themselves every day because the men are like "ah you women, when you see a red light you just put in down" which is what we're supposed to do. Yeah, and if a woman does a better job than a man then she's a bitch. Cause then all the blokes go "oh she's just having a good day". So you have to go and prove yourself again. (Participant 13)

The notion of females in male-dominated environments having to prove themselves to supervisors and colleagues has been demonstrated in previous studies (Pirotta, 2007; Steed & Sinclair, 2000). Steed and Sinclair reported that women have to demonstrate themselves to be highly capable, reliable workers, often under a microscope of greater scrutiny than their male counterparts.

Research investigating coping strategies women employ when working in a male dominated environment has demonstrated similar results (Eveline, et al., 1988; Tallichet, 1995; Yount, 1991). Eveline, et al., explain that women working in traditional male environments are required to balance conflicting views of their feminine roles. The participant's desire to distance themselves from the feminine stereotype is due to attempting to reconcile the conflicting demands of women's role as miner versus their role as female. In order to be accepted, women are required to adopt roles as miners, however, the traditional role of miner is male. Therefore, women are attempting to reconcile the contradictory demands of playing a male miner versus being a female.

Getting along

The second adaptation strategy identified by the participants was the importance of getting along. As mentioned above, being viewed favourably and accepted by work colleagues was important for job progression. Many participants discussed their experience of discriminatory practices surrounding the training

process. Because supervisors were responsible for choosing who received training to drive the more skilled machinery, it was important for the participants to be accepted and *get along* with others in order to be selected. Those who were easy to get along with or who were considered friends with supervisors were more likely to access training opportunities. Alternatively, if a woman was perceived as difficult she was not likely to be given training opportunities, "*They choose who they want (to be on the loader)... if you're friends it's easier (laughs). It's tied in with the person again, if you're a real bitch you don't get anything. (Participant 15)*"

> *But it's funny that sometimes, some of the boys that start with the old boss they got straight in with the boss and they got straight onto the machinery which isn't really fair like most of us have to wait 12 months before we get off a truck onto something else, in a way that's not fair. (Participant 3)*

> *Yeah, you can get moved about. It depends on how well you get along with everyone around (you). (Participant 13)*

> *...like you get supervisors who have got their pets, their mates and you see things like who moves and who doesn't... Simple things like going home early. (Participant 16)*

The notion that career progression was based on being accepted by colleagues and supervisors was also found in the AusIMM (2009) survey. The AusIMM survey reported that promotions were more likely to be given to those who were friendly with the boss.

In a FIFO environment where colleagues worked and lived together in close proximity, it was generally regarded as essential that colleagues maintain good relations. By preserving close relationships with others, it provided participants with companionship support, that is, a sense of social belonging (Wills, 1991). Participants explained that social support assisted the transition to mining.

> *I used to like it, it was hard at first with the transition especially from doing what I wanted after work but once I got used to it, it was good and started mixing with the people. (Participant 19)*

> *After work I go to the bar and drink with the boys I think there is two of us, so there's another lady that goes to the bar and we sit down and drink with them. Yeah I've known a few of them before I started here, so that's what helped. (Participant 1)*

Everybody that's from here is my friends, a lot of my friends are out here which is a big bonus and is the main reason I haven't left yet. (Participant 3)

A strategy most participants employed to cope with the isolation that can arise with the FIFO lifestyle was to utilise support from other colleagues working alongside them at the mine.

I love the blokes I work with, they are a great bunch. I get along well so I would rather just stay where I am comfortable. It's not too bad, as much as we all gripe about it, hating being out here, it's not too bad. We all have a tight group of friends and we are all there for each other. (Participant 8)

As Participant 12 explained, support was also drawn from partners and family that worked with participants at the mine, "*people have said to me over the years you're so lucky you and ___ being out here together and I say yeah we are in the respect that if you need a cuddle or you need some sort of reassurance or you just need someone you've got it.* It also gave participants a sense that they weren't absent from family events, "*It's not too bad out here if I was single it would probably be bad but because my partner is out here and my family so I don't feel I miss out on anything. (Participant 16)*"

Previous research in this field supports the notion that colleagues can act as a buffer against isolation and loneliness that can occur as a part of the FIFO lifestyle, (Costa, et al., 2006; Pirotta, 2007; Steed & Sinclair, 2000). A sense of belonging can also provide the women with a buffer against social identity threat and a feeling of inclusiveness when faced with identity threatening environments (Richman & vanDellen, 2011). This was confirmed by the women when they described the consequences of being without social support or acceptance from co-workers, as Participants 11 and 13 explained:

And when you work out here the people you work with are the people you socialize with. So it's very important that you do get along with everyone. You try to get along 'cause you don't want to be branded as 'that girl', so you do really, really try hard to get along, to do something great. So they'll say 'oh she did a good job on that today'. (Participant 13)

I got a vendetta against me for some reason… I'm determined to be nice to them, we work here and live here for two weeks with everyone, we only get a week away so we have to get on well with the people when we are here, but everyone is pretty good, but there are certain groups because people have

been here a long time together and they know each other and they do stuff on the weekends with each other, whereas with ___ and I are like step back, we are too busy to do things on our week off. (Participant 11)

Another issue women had to deal with was romantic relationships between colleagues in the close communal living of the mine. If the relationship deteriorated, there was the potential that the woman would become the target of harassment, gossip and ridicule.

Because if you got into a relationship and it goes bad then... we were sort of like together for a very short time and got on really well. Then it all went really bad. And he didn't get over it and it dragged on for 18 months. And I'm like 'mate, get over it'. But it didn't bother me that he was annoying me but it bothered me that he was involving other people on the crew. He wouldn't leave me alone and again and again and again he'd call me names and all this sort of stuff. (Participant 13)

The participants' experiences in the present study were replicated in Steed and Sinclair's (2000) study of stressors encountered by professional females working in a FIFO capacity. The participants reported that women came under greater scrutiny and were more likely to be the object of gossip because they were the minority.

In order to avoid workplace gossip, the women felt the need to be aware of interpersonal communication and where and when it occurred. Developing a relationship with a colleague meant the collision of the participants' work and private life, as experienced by Participant 7,

That's an example of someone sleeping with the wrong person out here, that's why I wasn't going to get involved with anyone out here, that's why I worked with ___ for four months even though I was interested in him the whole time before we developed a relationship... so I knew nothing like that would happen. I made sure he was a pretty sound character. It's better to keep your work and personal life separate and you know what some men are like out in areas like this, there's not many girls and they want a bit of a floozy.

These findings are consistent with Pirotta's (2007) study where some women reported that in order to have good relations with colleagues, it was important to be professional and "not mix work and play" (p. 37).

On the other hand, participants described how partners could be invaluable as they could act as a source of support and buffer against unwanted attention and

gossip. Participants 4 and 11 respectively, describe how they are treated differently by others when they had a partner compared to being single,

> *If my partner didn't work here it would be hell, cause when I was single and working here it got to the point where I hated being here and I think when your single as well you do get victimized.*
>
> *...also because my husband works here too so they know where the boundaries are and they don't say anything to me that they might say to other girls 'cause they know my husband is here.*

Having a partner at the mine also allowed the women to separate from the main group and the gossip that can arise, *"You have the people here and it's only a minority... they are just vicious, they say stuff and they try to cause trouble so sometimes its better just to keep to yourself, do you know what I mean? (Participant 14)"* and provide them with a sense of belonging, *"having a partner takes you out of that because your priority is not always going to be what people think anymore or mixing you know, finding somewhere to sit cause you have found someone you fit with so you don't need to worry about that anymore. (Participant 4)*

Partner support was a concept that also arose in Eveline, et al.'s study (Eveline, et al., 1988). The researchers found that having a supportive partner at the mine provided "a sense of security and acts as a hedge against some forms of male antagonism" (p. 62).

From the participants' accounts, it appears that maintaining good relations between co-workers is particularly relevant when living and working on site. Moreover, social support acts as a buffer for maintaining a balance between concerns from the environment and internal resources (Bergman & Hallberg, 2002). That is, the women used their social support as a mediating factor to cope with difficulties inherent in their environment such as discrimination, harassment and isolation.

Time out

Although social support was an important coping method for most participants in the study, many women also described their need for time out. Due to the close community living inherent when working and socialising within the same environment, participants experienced excessive social interactions, as described by Participants 16, "*Outside of work I socialize with my crew but 'cause you're with*

these people for 2 weeks my time at home is my time, I like to stay home and do my
stuff" and 7, *"Sometimes at the end of the day I don't really want to talk to anyone*
apart from __ you're with everyone all day at work… you can't live in people's
pockets."

Intense exposure in a closed environment, which the FIFO communal living
afforded, provided the potential for undesirable social contact, *"you reach a point*
where you're shifting more dirt out of work than when you're at work. (Participant
19)" In an environment where women are trying to make a good impression in front
of their work colleagues, negative remarks can truly affect the women, as experienced
by Participant 4, *"the games people play makes you very paranoid, I don't know, like*
people just generally making you feel stupid with your job" resulting in *"I used to go*
down to the bar every night and talk to everyone but I don't do that anymore, it's not
worth it."

The unwelcome interactions that participants experienced lead to many
participants expressing a desire for time away from colleagues and work topics, to
separate work and their private life.

> *By the end of day shift I'm cranky and want a day off… by the end of night shift*
> *I don't want to be here anymore I've had enough cause I'm not a people*
> *person and I get sick of seeing the same people 14 days. (Participant 8)*

> *Yeah but I prefer to spend time by myself during my break but I have no*
> *problem people coming and talking to me and sitting down chatting but if I*
> *want to have conversations and spend time with someone I'll go to them, do*
> *you know what I mean? (Participant 14)*

Research supports this phenomena described by the participants by
demonstrating how particular environments can impact on people. Specifically,
uncontrollable and excessive social contact can lead to social overload and a lack of
privacy (Baum et al., 1982). As a way to gain privacy, individuals instigate
withdrawal coping responses by socially removing themselves from the environment
(Evans, Rhee, Forbes, Mata Allen, & Lepore, 2000).

Participants in the current study identified obstacles within their environment
that prevented them from finding their own space. Participant 19 recognised that the
physical environment limited her ability 'to get away' from being scrutinised:

Sometimes you need your own time… Me personally I would prefer that you could go home after work. Have a separate life to here, you can't get away, you can't have a social life without everyone knowing something. At least in a small town you can go home to your own house, whereas here you go back to your room and there's always someone walking past… (Participant 19)

The inability for female participants working in a FIFO capacity to establish a separate life from work was also found in previous studies (Costa, et al., 2006; Steed & Sinclair, 2000). Participants described the difficulty in obtaining privacy when rooms and bathrooms were shared. Furthermore, in line with participant 19's views above, participants in Steed and Sinclair's study believed their behaviour was more likely to be scrutinised due to being the minority.

For participants with partners, there were further obstacles to finding solitude, due to the facilities available in a village setting. Participants' rooms were the one area in the camp that provided them with space for themselves, however, when participants shared their rooms with partners, it denied them the only space available to be alone.

…it's like you work together, you sleep together, you eat together, you go on your R and R, your whole life is altogether and it's pretty full on and when you get the shits with each other or whatever you've got no space when you are living…it's not like when you're at home and you've got lots of rooms in your house or you can jump in the car it's just full on. (Participant 14)

It is hard to find your own space, I suppose if you were single it would be okay but I live with my partner and you've got your bedroom and a bathroom and you can't find your own space, no matter where you go, you're at work, gym, bar… I find it hard to find a quiet spot, to relax, there's no time for that. (Participant 12)

I go home to someone now but sometimes that can be hard too, living and breathing the same thing every day can be hard and it was at first, especially me I like my space too. He's in drilling but sometimes you just want your own space but you can't do that. I think it would be easier if we had separate jobs in town and then come home but we're lucky we don't talk about work at home. (Participant 19)

As the participants described above, the difficulty in finding their own space resulted in an inability to find solitude. The solitude that accompanies time spent alone can ward off the perils of over-stimulation and can provide individuals with

"disengagement from the immediate demands of other people, a state of reduced social inhibition and increased freedom to select one's mental or physical activities. Such a state is typically experienced when a person is alone." (Long & Averill, 2003, p. 22).

Interestingly, research on solitude suggests that nature is conducive to solitude (Long, Seburn, Averill, & Thomas, 2003). However, the participants in the current study discussed how they were unable to find a quiet place regardless of the village being surrounded by a bush setting.

Furthermore, separating their private and personal life appeared to have a positive effect on maintaining friendly relations with co-workers.

> *I get along well with everyone and I think it's because I do keep my distance, not keep my distance, but you just don't get in everyone's face too much… not get too wrapped up in it. (Participant 7)*

As discussed previously, certain identities are more accepted in mining and there is pressure on women to adopt those identities by separating themselves from the feminine stereotype (Yount, 1991). However, participants in the current study also described the need to seek out female company, perhaps in a bid to be in touch with the more feminine parts of the self or to feel social inclusion without having to adapt. Previous research has also found that women in mining desire more contact with other women (Pirotta, 2007) and seek female role models (Pattenden, 1998). In the current study, participants initiated conversations with other women as another strategy to separate work from their private life. The participants explained how they interacted with women to broaden their topics of conversation and avoid discussion around work issues that tended to dominate male discussions.

> *Sometimes it's just nice to have a girl conversation for a change, talk about shopping. (Participant 7)*

> *The other lady she's pretty alright hey (laughs) when you sit down to talk and the guys come along and they say why you sitting there talking ladies business and I say you don't have to sit here go somewhere else cause we got things to talk about too. (Participant 1)*

> *I only socialize once a fortnight when we have the shift change and other than that I don't go near the pub, I have some girls over at my veranda and we sit and talk. (Participant 18)*

However, some women were careful to delineate between their desire to work with women and socialise with them, *"there should be more women out in the mines so you can socialize with, not to work with…" (Participant 18)*

According to the research, the difference between an experience of positive solitude and an experience of loneliness lies in the level of control a person perceives they have in the situation (Long & Averill, 2003). An abundance of solitude can have a negative affect on individuals, as Participant 17 explained:

> *I go to the pub or go home to my room, sometimes you don't mind being by yourself sometimes you hate it. It can get lonely; it's all right… if you like the solitary life. (Participant 17)*

Time out appeared to be an important consideration for many of the women in the present study, particularly in an environment where women were the minority and came under greater scrutiny. However, camp life was not conducive to solitude and many women described the difficulty in finding their own space to allow separation between their private and work lives.

Discussion and Implications

The current study attempted to fill a gap in the research on FIFO employment in the mineral mining industry by investigating the experiences of women employed in blue-collar jobs within the sector. By taking an IPA perspective, the author was able to glean a considerable amount of data relating to the participant's experience of their life at a remote mine site. Three themes were identified from the interview data: (1) workplace barriers to job progression, (2) suspension of short term living for long term gain and (3) adaptation to the lifestyle. The following section aims to discuss each theme before providing implications for future research in relation to the results and potential limitations that may have affected the findings.

Workplace Barriers to Job Progression

The participants experienced a sense of monotony and boredom while driving the dump trucks which affected their job satisfaction. Job satisfaction has shown to be an important factor in psychological wellbeing (de Jonge, et al., 2001). Monotony and underchallenge in the workplace in particular has been shown to relate to depressiveness for low and semi-skilled workers (Lehmann, et al., 2011). The participants' experience of monotony was the impetus to strive to progress in their jobs, however the participants' experience of discrimination inhibited their ability to advance to the more skilled equipment. The women believed they were often overlooked for training opportunities and the men were favoured to drive the more sought after machinery despite their attempts to prove their competency.

RCT (Eagly & Karau, 2002) was demonstrated in the current study to provide a framework to explain why discrimination may exist in male-dominated workplaces. The theory posits that women are typically viewed as being more nurturing, kind and weak compared to men who are viewed as task-oriented, strong and dominant (Eagly & Karau, 2002; Schein, 2001). Thus, when women are employed in a male oriented workplace, where the environment is perceived to support male traits, such as strength and bravery, women are perceived to be incongruent with this environment. The incompatibility between women and the environment may lead to women being stereotyped by male co-workers as incompetent at their work and result in discrimination.

The hematite restrictions explored by female participants in the current research are unique to this mine but contribute to the sense of inequity and

discrimination impacting on participants' job progression. In addition, the hematite restrictions may have placed an overemphasis on gender issues in the work place. Although the hematite restrictions are viewed as a positive for some participants in the current study, it has a negative bearing for many female workers. The policy on hematite handling restricts females' career progression as it limits their access to machinery and therefore affects their job satisfaction. The hematite issue sheds light on the fact that there are two groups with conflicting needs, that is, respecting local customs versus inhibiting women's career progression and is a complex subject to manage.

Women's experience of discrimination has remained constant for women working in male-dominated environments regardless of whether they are engaged in professional or non-professional job types for over 25 years (Eveline, et al., 1988; Pattenden, 1998). The current study also found that women on this site experienced some work practices as discriminating against female workers. However, the hematite restrictions also may be confounding the beliefs of discrimination experienced by the women. For example, supervisors may be choosing males more often for training in response to the need to manage access to machinery when the hematite is unearthed rather than a concerted effort to exclude women from progression.

If women in the mining industry continue to feel discriminated against, this will have implications for the industry for both the attraction and retention of women.

Suspension of Short Term Living for Long Term Gain

The second theme related to a suspension of life while working towards long term gain. This allowed the participants to reach their short and long term material goals due to the high financial incentive FIFO employment afforded. However, one drawback to the high wages and the lifestyle this enabled was the notion that some participants had to commit to this type of employment longer than they initially intended, a phenomenon commonly referred to as the golden handcuff (Gillies, et al., 1997; Pirotta, 2007; Sibbel, 2001). Suspension of the participants' home life also had the potential to cause difficulties with balancing responsibilities and relationships at home, thus resulting in a severing of relationships. Most participants agreed that FIFO employment had a specified time limit due to the suspension involved with the FIFO lifestyle.

Difficulties in balancing and managing home responsibilities is consistent with previous studies on women in FIFO employment (Costa, et al., 2006; CSRM, 2006; Pirotta, 2007; Steed & Sinclair, 2000). Female participants have reported difficulties maintaining relationships with family and friends at home and committing to community events. A possible solution mining companies could adopt to alleviate some of these concerns is shorter roster cycles to reduce the length of time spent away from home.

A finding in the present project that contradicts earlier studies looking at professional women in FIFO employment is the ability to balance family with the FIFO lifestyle. Participants with children in the present study discussed how they were able to maintain families while involved in FIFO roster patterns, with the assistance of extended family and support. This discrepancy could be due to the participant sample, that is, blue-collar workers versus professional women, however, further research is required to explore this issue. Another interesting finding in the current study was that participants who did not have children believed that balancing family and work was not possible. On further exploration, participants were heavily influenced by male co-workers' experiences. That is, childless participants' perceptions appeared to be shaped by the negative experiences of male coworkers who were distressed to be away from their families.

Adaptation to the Lifestyle

Adaptation and coping with a male dominated environment and FIFO was the third theme to emerge from the women's interviews. It appeared that two of the strategies, becoming 'one of the boys' and 'getting along' were a response to discrimination in the workplace. Many women in this study preferred a predominantly male environment due to the belief that the environment tended to be less interpersonal and more task oriented. A majority of the women identified with being 'one of the boys' and there was a tendency for them to be disparaging towards other women in the workplace. This phenomenon has been reported elsewhere in the literature. For example, Pattenden (1998) and Pirotta (2007) refer to a need to "toughen up" to be accepted in the workplace and Yount (Yount, 1991) described how women separated from the feminine stereotype in order to be accepted by the men.

Social Identity Theory (Tajfel & Turner, 1985) was applied in the current study to explain why women choose to identify with the status quo by highlighting the

traits that are more acceptable to the men and distancing themselves from the feminine stereotype. In a male dominated environment that favours masculine traits and equates feminine traits with incompetency, women are choosing to construct social identities that align themselves with the 'in group' and distance themselves from females who are viewed as the 'out group', thus developing a more masculine identity by being 'one of the boys' and less like 'one of the girls'.

The second adaptation strategy that was utilized to deal with the discrimination in the workplace was referred to as 'getting along'. Participants described that being viewed favourably by fellow workers increased their chances of being promoted to other machinery. Moreover, 'getting along' socially was important in a camp where people lived and worked in close proximity in order not to be isolated or excluded. By seeking social support it provided participants with a sense of belonging and acceptance which is an important buffer against social identity threat (Richman & vanDellen, 2011). A possible strategy to strengthen the women's sense of identity, increase their sense of belonging and decrease their separation from their own femininity would be to provide networking and socializing opportunities for women on site. This could include formal networking opportunities provided by industry such as the "Women in Mining Network" or informal opportunities organised by the women at the mine. This allows women to derive support from others who are in a similar situation.

The third adaptation strategy, 'time out' was a response to both the lack of privacy inherent in an environment where one both works and lives and being part of a minority group. Social withdrawal was an important coping tool for participants in the current study to manage the close community living inherent in the FIFO lifestyle. However, the ability for participants to find a space of their own was hampered due to the village environment. Participants working with partners at the mine found it particularly difficult to find their own space due to shared living quarters.

'Time out' is not a phenomenon that has been explored in relation to the mining literature elsewhere but has implications for miners' psychological wellbeing. Solitude is important for women who are in a male-dominated environment where their actions are scrutinized and they are the constant objects of interest. Solitude offers freedom from the demands of experiencing oneself as the object of others' thoughts and actions and decreases intrusive self consciousness (Long & Averill, 2003). This has implications for camp development and a consideration of the village

environment's ability to provide solitude in a setting that offers very little privacy. For example, a quiet place similar to a library and with similar facilities could be established on site where people could read or use laptops in private.

The present study also has implications for Clinical Psychology. The findings in the current study provide understanding of the common experiences of women working as a blue collar worker in a FIFO capacity in a male dominated environment. This will aid clinicians during, individual treatment, in empathizing and understanding the difficulties women face and the coping strategies they use. The research has the potential to aid in the development of psycho-educational programs to prepare women for working in the FIFO industry.

Further Research

As the current study employed an exploratory approach to gain a better understanding of the women's experiences, the findings raise questions that can be explored in further research. One area for further research would be to investigate further the discrepancy found in the current study pertaining to the ability of women to manage FIFO whilst raising a family. The previous research exploring women in FIFO employment reported that women believed mining was not compatible with raising a family. However, some women in the present study described how they managed children with the help of extended family. As only a relatively small number of women had children in the current study, further research in this area may be worthwhile. Furthermore, it would be worth considering the age of the children and/or the impact of culture or personality traits on women's perceptions of raising a family while working in a FIFO position. Interviews of the children whose mothers participate in FIFO employment might also be a topic for future research.

Another area somewhat neglected in the current study due to the emphasis on the participants' work life was the participants' experience of their home life. The current study conducted interviews at the workplace which gave rise to the themes being mainly work-related. It could be beneficial to conduct interviews with the participants while on their break at home to provide a better understanding of how FIFO employment may impact on their home life.

Lastly, there appears to be a lack of theoretical understanding of the participants' experiences in the more recent research on women in FIFO employment. To overcome this deficiency, further research utilizing grounded theory (Denzin &

Lincoln, 2005) may be helpful to develop theories to explain and gain a better understanding of the phenomenon under study.

Limitations

A limitation relating to data collection involves the setting where the research interviews were performed. Interviews were conducted in a room close to where the women were working and this proximity may have stifled the women's responses and prevented them from talking freely due to fear of retribution from supervisors or colleagues. Although a room was made available to the interviewer by the mine, another approach could have involved interviewing participants at the village, away from their workplace. That being said, all of the women present during the interview period agreed to discuss their experiences.

When interpreting the findings of this study, its methodological limitations should also be taken into consideration. Primarily, the women were interviewed at one mine site, therefore, aspects of the themes are representative of that particular site. However, many of the findings were supported by previous research, suggesting the experiences of the participants in the current study may be generalized to other women on other mining sites.

As the researcher had prior experience working at this mine, there was potential for advantage and limitation relating to that prior experience in the present study. The findings may have been influenced by researcher bias as the author could have unintentionally provided interpretation of the data that were not representative of the participants' experience due to the researcher's own familiarity with this particular mine. This was countered to a large degree by presenting the main findings to the women following the interviews and receiving their feedback. Moreover, the themes and sub-themes were presented to the author's supervisor to gain an independent observer's feedback and perspective. Alternatively, a possible advantage to having prior knowledge of mining could have assisted in developing rapport with the women during the interview process.

Conclusion

A skills shortage is currently being experienced in the resources sector, and due to the relatively low numbers of women employed in mining, women have become a source of "untapped" labour. With the advent of FIFO operations and its adoption by many mining companies, this has placed new challenges on mining

employees. Women are not only required to cope with roster patterns that require them to be away from family and friends for extended periods, they must also contend with the challenges of living and working as a minority in a male-dominated environment. The experience of women in blue-collar employment is underrepresented in the mining literature, with the current emphasis on professional women's experience of mining. The current study, using an IPA methodology presents a unique approach to exploring women in blue-collar employment's experience of mining. This method was successful in identifying issues that support earlier research, add to the small research base currently available and contributed new material to the study of women in mining. The exploratory nature of the present study also exposed avenues for future research to provide a better understanding of how low and semi-skilled women experience FIFO mining environments.

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Appendix A   Demographic Data

1   Name_____

2   Age_____

3   How would you describe your household?

[   ] Single – never married

[   ] Divorced

[   ] Couple with no children

      [   ] Single parent family

      [   ] Nuclear family (e.g. mother, father and children)

      [   ] Blended family (e.g. remarried or re-partnered and children)

      [   ] Other   _____

4   Ages of children _____

5   Current job title_____

6   Roster cycle_____

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

8   How many years have you been working at this mine?
_____ years

Appendix B   Interview Guide

Q1. Tell me about your experience of being a female employee in the mining industry?

Prompts

      What is your experience of working/living on site?

      What attracted you to the minerals industry?

      What obstacles if any do you think remain in the industry which may inhibit the participation of women?

Q2. Tell me about your experience of fly-in fly-out as a practice?

Prompts

      What has been your experience of the fly-in fly-out lifestyle?

      What is your experience of fly-in fly-out in relation to your:

      Relationships?

      Social life?

      Health?

Appendix C   Information Sheet

Project title: An Exploration of the Experiences of Female Mining Fly in/Fly out Personnel.

Dear Participant,

Thank you for your interest in this study. My name is Anne Bailey and I am currently doing a Doctorate in Psychology at Edith Cowan University, Western Australia. As part of the course requirement, I am expected to complete a research project in an area of interest that would add to the current body of scientific knowledge. The present study has been approved by the Edith Cowan University Human Research Ethics Committee.

The aim of this study is to gain insight into women's experience of working in a fly in, fly out (FIFO) environment in the mining sector. I am interested in everything that you consider important in your experience of working in a FIFO mining environment. The research will involve two components. I will first conduct a face-to-face interview, which will be tape recorded and will take approximately one hour. During the interview I will ask you questions to explore your experiences of working in a FIFO mining environment. The second part of the project will take place a few weeks after the interview and will involve the ordering of statements written on cards provided by the researcher. The statements will be derived from the interviews and will contain accounts of your experiences relating to FIFO.

Your participation is voluntary and you are free to withdraw at any time. All information that you provide will be treated as strictly confidential and any reports that result from this study will only present overall information, with no individuals identified whatsoever.

If you would like to participate please fill out the consent form and return it in the reply paid envelope. Please include your phone number so I can contact you to arrange a convenient time and place for the interview. All interviews will be conducted while you are on site.

Should you have any questions regarding this study please feel free to contact me on 0402 311 391. The present study is being supervised by Dr. Elizabeth Kaczmarek, (08 6304 5193) and Dr. Lynne Cohen (08 6304 5575) at Edith Cowan University. If you would prefer to speak to a third party not involved in the study please contact Dr Craig Speelman, Head of School (Psychology), on 6304 5724.

Thank you for your interest in this research project. If you consent to participating in this project, please sign the consent forms provided. You may keep this Information Sheet for your own records.

If you feel distress at any time during or after the interview, the Employee Assistance Services is available for you to contact on (07) 4771 5649.

Kind Regards,

Anne Bailey

Appendix D   Letter of Consent

Project title: An Exploration of Women's Issues in a FIFO Mining Environment

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 this research project and understand I can withdraw consent at any time.

I understand that the data I provide will be kept confidential.

I agree to have the interview tape-recorded and I understand that once the interview is transcribed, the recording will be stored in a secure location at Edith Cowan University for seven years after which it will be destroyed.

I understand that I will be contacted a few weeks after the interview to participate in the second study. I understand that I am under no obligation to participate in this second study.

I agree that the research data gathered in this study may be published provided that I am not identified in any way.

I agree to participate in study one.

Participant's signature: _____ Date: _____

Telephone number:_____

Appendix E   Hematite Policy

Handling of Hematite Alteration

*Red Ochre will be managed in the following way. During drilling, gathering geotechnical information, blasting and load and haul no female employees, sub contractors or visitors are to be given tasks which might bring them in **direct contact** with the Ochre. Direct contact is interpreted in the following ways:*

- *Handling or removing Ochre from site.*
- *Operating equipment involved in loading and hauling Ochre – where the equipment is in direct contact with the Ochre.*
- *Ancillary equipment cleaning and maintaining Ochre areas including water carts.*
- *Any process that brings people into contact with Ochre.*

There are no restrictions on females travelling or working in the proximity of Ochre as long as no direct contact is made with the material. For this reason females are not to be given tasks that would bring them within a 2 metre radius of any Ochre. (Handling of Hematite Alteration, p. 1)

Further on in the document it states:

It is not the intention that any person currently employed in the Mine is to be disadvantaged by this situation; it will mean we adjust our operations to suit these requests. _____ (name of mine) remain committed to equal opportunity employment and will continue to recruit female employees. (Handling of Hematite Alteration, p. 2)