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Mental health and wellbeing concerns of fly-in, fly-out workers and their partners: A qualitative study

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Manuscripts

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3 Running Head: Fly-In Fly-Out Lifestyle
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15 **Mental health and wellbeing concerns of fly-in, fly-out workers and their partners: A**
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17 **qualitative study**
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Abstract

Objectives: Fly-in, fly-out (FIFO) work involves commuting long distances to the worksite, and living in provided accommodation for 1-4 weeks while on-shift. While the potentially detrimental impact of FIFO work on the health and wellbeing of workers has been documented, little attention has been paid to how workers, or their partners, cope with this impact. This study sought to investigate how workers and their partners negotiate the impact of FIFO on their mental health and wellbeing. **Methods:** Thirty-four FIFO workers (25 men, *M* age = 41 years) and twenty-six partners of FIFO workers (26 women, *M* age = 40 years) completed a set of open-ended questions about their concerns about the FIFO lifestyle, and the support they use. **Results:** Participant-validated thematic analysis generated three main themes: managing multiple roles, impact on mental health and wellbeing, and social support needs. Results revealed difficulties in adjusting between the responsibilities of perceptually distinct on- and off-shift lives, and managing potential psychological distance that develops while workers are on-site. Participants emphasised the importance of maintaining quality communication and support from family members. Workers and partners attempted to maintain mental health and wellbeing by regularly engaging with support networks, though many felt organisational support was tokenistic, stigmatised, or lacking. **Conclusions:** Recommendations for enhancing support provided by FIFO organisations are offered. In particular, organisations should emphasise the importance of good mental health and wellbeing, maintain transparency regarding potential challenges of FIFO lifestyles, and offer professional support for managing multiple social roles and effective communication.

Keywords: health; wellbeing; long-distance commuting; shift-work; relationship communication

Article Summary

Key Findings

- Fly-in, fly-out workers and partners reported difficulties in adjusting to on- and off-shift roles and responsibilities, coping with feelings of isolation and loneliness, and maintaining quality communication with partners at a distance.
- Workers and partners alike typically felt unsupported.
- There was scepticism of, and reluctance to access, support provided by FIFO organizations, as well as a general feeling that the general public is unsympathetic towards FIFO workers and families.
- Recommended strategies for mitigating problems associated with FIFO work patterns included maintaining effective communication with partners, and receiving emotional and practical support from family members, neighbours, and other FIFO families.

Strengths and Limitations of the Study

- This is the first study to our knowledge to have explored the impact of long-distance commuting on both FIFO workers and partners.
- Study participants were situated across Australia, including those at FIFO sites.
- We collected data via questions probing domains that we deemed to be important to FIFO workers and their partners. These questions may have neglected other relevant areas of the FIFO experience relevant to health and wellbeing.
- While our participants cited various adverse impacts of FIFO work on their health and wellbeing, we cannot identify the mechanisms underlying such impact.
- This study highlighted the mental health and wellbeing concerns raised by FIFO workers and their partners, and the strategies they used to address these concerns, while pointing to areas in which further support may be needed.

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3 Mental health and wellbeing concerns of fly-in, fly-out workers and their partners: A
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5 qualitative study
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7 With unique work shifts come unique lifestyle situations. *Fly-In Fly-Out (FIFO)* work
8 involves employees travelling (typically, flying) long distances to the worksite, living in
9 provided accommodation during their on-shift roster, and travelling home between shifts [1].
10 FIFO workers commonly have schedules of twelve-hour shifts for 1-4 consecutive weeks [2].
11 Also termed long-distance commuting, FIFO work is becoming increasingly prevalent in
12 Australia, mostly as a result of the mining industry boom of the last 15 years, though it is also
13 common in the construction and resource sectors [3]. Although FIFO work is still relatively
14 rare, in some Western Australian and Queensland communities as many as one-in-six people
15 are employed in FIFO positions [1,4]. Concerns have been raised around the health and
16 wellbeing impact of FIFO work [5,6], but evidence around the impact on mental health and
17 wellbeing of workers and their partners is in its infancy.
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30 Most FIFO workers are young or middle-aged men, a demographic already
31 particularly prone to mental health problems and at increased risk for suicide [4]. Industry
32 reports have suggested that there are few disadvantages to FIFO life other than potential
33 inconvenience of prolonged work shifts, and that there are many mental health benefits
34 including being a part of a challenging work environment, and unique opportunities to meet
35 new people, see new places, and earn a high income [5,7,8]. However, research suggests that
36 FIFO work has both costs and benefits for mental health and wellbeing. For example,
37 Torkington, Larkings and Gupta [9] interviewed 11 FIFO workers about their psychosocial
38 wellbeing and perceived support. Some found their job rewarding and enjoyed interactions
39 with colleagues, but others experienced loneliness, fatigue, and problems in balancing time
40 away for work with social and family time. Other research has suggested that, among workers
41 with long shifts and low autonomy over their shift schedules, FIFO work can have negative
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3 repercussions for both work and home life [10]. Such problems may be compounded by a
4 failure to access support; relative to non-FIFO workers, FIFO workers have also been found
5 to be less likely to report or seek help for mental health concerns [11].
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9 FIFO work may also impact on the wellbeing of workers' significant others. Most
10 research on the impact of FIFO work on mental health or wellbeing has centred on workers'
11 children. For example, Lester and colleagues [12] found that adolescent children's depressive
12 symptoms and emotional and behavioral difficulties could be partially attributed to the
13 intermittent parental absence that characterises FIFO employment. In contrast, Dittman,
14 Henriquez and Roxburgh [13] found no differences between FIFO families and non-FIFO
15 families in the domains of relationship quality, parenting competence or child emotional and
16 behavioral difficulties. Kaczmarek and Sibbel [14] found that the wellbeing of FIFO workers'
17 primary school aged children did not significantly differ from that of similar families with a
18 parent in the military or from the general community. Yet, partners of the FIFO workers in
19 this study reported more problems with communication, support, and behavior control within
20 the family than did families from the military or the general community. A study of people
21 who had committed suicide compared Australian miners (of whom many were FIFO workers)
22 to non-miners, and found that the miners were significantly more likely to have experienced
23 relationship problems [15]. This demonstrates the potential interdependence of the mental
24 health and wellbeing of FIFO workers and their partners, and the complex and dynamic
25 impact of FIFO work on workers and others.
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46 The unique lifestyle circumstances imposed by FIFO work have been associated with
47 potential mental health risks. Yet, little evidence exists regarding how best to support FIFO
48 workers and partners to navigate the complexities of FIFO life. Some evidence suggests that
49 family cohesion, connectedness, flexibility, and meaningful communication are important
50 factors for buffering from potential negative effects of FIFO life on wellbeing [16,17].
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3 Quality family time, routines, social support networks and clear set boundaries also aid in the
4
5 adjustment and management of the FIFO lifestyle [16]. However, beyond this general
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7 evidence about how families might cope with FIFO life, little has been documented regarding
8
9 how workers and partners can manage FIFO work to maintain positive mental health and
10
11 wellbeing.

12 13 **The Present Study**

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15 The aim of this study was to develop understanding of how FIFO workers and their
16
17 partners experience and negotiate the impact of FIFO work on their mental health and
18
19 wellbeing. Understanding how workers and partners manage any negative consequences of
20
21 the FIFO lifestyle may be informative for intervention purposes, because it may reveal useful
22
23 coping strategies, while identifying areas in which support may be especially required.
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25 Qualitative research methods were used to obtain a rich and in-depth insight into participants'
26
27 experiences.
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30 31 **Methods**

32 33 **Participants**

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35 Participants were 34 FIFO workers (25 men [79%], M age = 41y, SD = 11, age range
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37 = 25 – 65y) and 26 partners of FIFO workers (all women, M age = 40y, SD = 9, age range =
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39 27 – 58y) recruited through online social media group pages and media outlets (e.g., radio,
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41 television, newspapers, websites). The sample included 6 couples. The rest of participants had
42
43 partners that were not involved in the study. In return for their involvement, participants were
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45 entered into a random draw for \$30 AUD (US\$24) gift vouchers. No a priori sample size
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47 requirements were set.
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50 51 **Procedures**

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53 Participants self-reported their age, sex and their (or their partner's) FIFO working
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55 patterns (e.g., roster length) through an online survey. They were also asked whether overall,
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3 they liked (their partner) being a FIFO worker or not (*yes/no*). Participants were then asked to
4
5 respond to a set of questions about the FIFO lifestyle via email. The questions were, “Are you
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7 concerned about how the FIFO lifestyle affects you?” “What concerns you most about the
8
9 FIFO lifestyle?” “Are you concerned about how the FIFO lifestyle affects your partner?” “Is
10
11 there anything in particular that worries you about FIFO and your relationship?” “Do you feel
12
13 there is adequate support for those experiencing difficulties due to the FIFO lifestyle?” “Do
14
15 you think people seek the help they need?” “What barriers do you think holds them back from
16
17 seeking the support?” and “Do you have suggestions on how support for FIFO workers and
18
19 FIFO partners could be made better?” Although these were not open questions, participants
20
21 were invited to provide free-text (rather than *yes/no*) responses, and all participants did so.
22
23 The terms ‘mental health’ and ‘wellbeing’ did not feature in the questions, to minimise
24
25 potential self-presentational concerns inhibiting disclosure of relevant issues. All participants
26
27 provided informed consent prior to participating in the study and all study procedures were
28
29 approved a priori by the Central Queensland University Human Research Ethics Committee.
30
31 We attest that we have obtained appropriate permissions and paid any required fees for use of
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33 copyright protected materials.
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36 37 **Analyses**

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39 Responses were analysed by one researcher using thematic analysis procedures [18],
40
41 based on realist epistemological assumptions. The analyst was a UK-based social and health
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43 psychologist (BG), who has no personal links to FIFO, no history of research in this domain,
44
45 and was unfamiliar with the FIFO research literature prior to and during the analysis.
46
47 Responses were read and reread, for familiarisation purposes. Line-by-line coding was
48
49 undertaken to assign conceptual labels to pertinent excerpts. As coding progressed, an
50
51 inductively-derived thematic framework was developed and iteratively refined to best reflect
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53 emergent insights. Themes were labelled in part using representative phrases (i.e. ‘in vivo’
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3 codes) taken verbatim from the data, to demonstrate the veracity of the theme [19]. A second
4
5 researcher (AR) inspected the final coding framework and analysis, and verified that the
6
7 themes were coherent representations of the data. The final narrative was also verified, by two
8
9 FIFO workers and three partners who participated in the study, as a valid conceptual analysis
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11 of the FIFO experience.
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14 Data excerpts are quoted below as evidence of the validity of the analysis [20]. To aid
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16 clarity where necessary, punctuation was added, spelling mistakes corrected, and words added
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18 in brackets to clarify intended meaning.
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20 Results

21 Sample Description

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23
24 FIFO workers most commonly worked either day shifts (48%) or a mixture of day and
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26 night shifts (48%). Only one worker exclusively worked night shifts. Workers' rosters were
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28 between 4 and 29 workdays on-shift ($M = 15$, $SD = 8$), with between 2 and 21 days off-shift
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30 ($M = 8$, $SD = 4$). More than half (62%) of workers reported that, overall they liked being a
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32 FIFO worker. Partners reported that their partners mostly worked day shifts (62%), with some
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34 working a mixture of day and night shifts (35%), and one person working nightshifts. Partners
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36 reported their FIFO worker partners to work between 6 and 60 workdays on-shift ($M = 20$, SD
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38 $= 12$), with between 5 and 21 days off-shift ($M = 8$, $SD = 4$). More than half (64%) of FIFO
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40 partners reported that overall they did not like that their partner was a FIFO worker. On
41
42 average, participants' household income was AUD\$182,481 (US: ~\$143000; $SD =$
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44 AUD\$56,905 [US \$44700]), with the range between AUD\$52-320,000 (US \$41-250,000).
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47 Workers' occupations included plant operators, managers, train drivers, heavy machinery
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49 operators, and specialists.
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51 Thematic analysis

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3 Three themes were extracted, relating to experiences of negotiating multiple social
4 roles (theme 1), health and wellbeing issues surrounding FIFO employment (theme 2), and
5 social support needs (theme 3).
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9 **Theme I: “I’m leading two lives” – Managing multiple roles.** FIFO workers
10 typically conceived of their work and home lives as two discrete ‘worlds’, characterised by
11 different lifestyles, roles and responsibilities (“*I’m leading two personalities and two lives*”;
12 participant 13 [P13], worker, male [M], 38 years old [38y]). Commonly described through a
13 contrast with the domestic ‘world,’ the FIFO ‘world’ was seen to be more rigidly structured,
14 but allowing greater personal freedom, due to provision of assistance for everyday domestic
15 activities and the absence of immediate family commitments (“*I don’t have to worry about*
16 *cooking, cleaning etc.,*” P11, worker, M, 34y). The demands of these two ‘worlds’
17 necessitated the adoption of different social roles and patterns of behavior:
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31 *At work I have enormous pressure to deal with so [I am] more aggressive and*
32 *business-oriented. I need to maintain a bravado in a male-dominated industry. At*
33 *home I have to be happy, supportive, caring, friendly and show empathy* (P13, worker,
34 M, 38y).
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41 *While away I can just be a bloke. [When I’m at] home I’m a family man* (P22, worker,
42 M, 47y).
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48 Workers’ partners also described two ‘worlds,’ with the enhanced burden of domestic duties
49 and responsibilities imposed when workers are away requiring greater self-sufficiency
50 (“*[she’s] almost [a] pseudo single-parent, in certain circumstances,*” P26, worker, M, 52y).
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3 *My wife [says] “when he is away, I have to be strong and independent, service the*
4 *car, change the light bulbs, but when he comes home I am weak, defenceless and*
5 *dependent.” (P32, worker, M, did not report age)*
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11 Several workers experienced difficulties in negotiating the transition between their two
12
13 ‘worlds’ when returning home from a shift, struggling to adjust to differences in the pace and
14
15 requirements of domestic life:
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20 *The first few days [back home involve] trying to get up to speed with day to day life,*
21 *and a different routine. (P19, worker, M, 42y)*
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26 *It is sometimes difficult to readjust and function as an adult at home. By the time you*
27 *have adjusted, it is time to fly out again. (P5, worker, M, 28y)*
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33 Similarly, some partners struggled to adjust their settled domestic routines to incorporate
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35 workers’ return home, which was a potential source of tension:
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39 *When my partner comes home he feels like an outsider, as the kids and myself are in a*
40 *routine that differs from him. He tries to change things into his way of doing, which*
41 *creates havoc in the household. (P50, partner, female [F], 43y)*
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48 Participants described a process of renegotiating domestic roles and responsibilities upon
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50 workers’ return, with some partners expressing frustration at FIFO workers for not assuming
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52 greater domestic responsibility:
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3 *I work 3-5 days a week [and] I get mad at [him] sometimes as he is home and not*
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5 *helping with household duties. (P43, partner, F, 36y)*
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9 **Theme II: “The FIFO roster was the breaking point” – Impact on mental health and**
10 **wellbeing.** For most workers and partners, financial gain was the primary benefit of FIFO
11 employment (“*I am only working this lifestyle to get ahead financially,*” P1, worker, M, 23y).
12
13 Income was a source of stress for some however, as they felt they had limited autonomy over
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15 their employment and career, having become ‘trapped’ into undesirable working patterns by
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17 becoming accustomed to high income (“*I am locked into this lifestyle now,*” P57, partner, F,
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19 57y):
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25 *The golden handcuffs go on. As people earn more, they spend more, and take on*
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27 *larger debt burdens, causing them to be trapped in the mining FIFO work lifestyle.*
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29 (P7, worker, M, 32y)
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33 Indeed, many participants described adverse mental health and wellbeing effects of FIFO
34 employment. For many, absence from family was particularly detrimental. Workers,
35 particularly those with children, often felt that they were missing out on potentially significant
36 family events (“*I have missed out on a lot of living and memories with family,*” P57, worker,
37 M, 57y). Both workers and partners worried about the impact of the prolonged absence of one
38 parent on children’s wellbeing and development (“*Will we have regrets later? Are they*
39 *missing out on more than we realise, having their Dad work away?*” P42, partner, F, 34y).
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41 Workers also voiced concerns about being unable to respond to domestic emergencies while
42 on-shift:
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3 *We only have two flights here every week, Monday and Thursday. Once that window*
4 *to escape closes, you are trapped, and constantly hoping that nothing happens back*
5 *home. (P18, worker, M, 42y)*
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10 Many participants felt that FIFO work put considerable strain on relationships with partners.
11
12 Many spoke of physical separation leading to a sense of psychological distance, such that they
13 felt “*disconnected*” (P51, partner, F, 44y), or were “*leading separate lives*” (P28, worker, M,
14 58y). Communication between workers and their partners was valued as a means of
15
16 maintaining relationships, but distance was often felt to reduce the quality of such
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18 communication:
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24 *We talk every day, although I sometimes struggle to remain interested sometimes as*
25 *she is not in front of me, merely a voice on the phone. It can be a struggle to bring up*
26 *subjects of conversation, as my day can be quite mundane yet her job as a teacher can*
27 *have so many events happen that she wants to tell me about. (P6, worker, M, 29y)*
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34 *[The FIFO lifestyle] adds strain when we are both tired. If we were home we would*
35 *say nothing and hug but that's not possible through the telephone so it makes for*
36 *awkward phone calls. (P37, partner, F, 27y)*
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41 Physical and psychological distance was reportedly a source of tension for many. Some
42 participants reported growing suspicious of their partner's fidelity (“*[I worry that] he'll get*
43 *bored and cheat on me,*” P41, partner, F, 33y), and others felt resentful towards their partners,
44
45 for failing to fully acknowledge the perceived sacrifices each makes for the family unit:
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51 *Absence doesn't make the heart grow fonder. When things get tough at home, the*
52 *resentment can sometimes creep in. (P46, partner, F, 38y)*
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3 *I do resent the fact that he has a week off where he gets to do nothing. I am working*
4 *full time and raising our small child, which means I have been unable to attend a*
5 *number of training and workshop sessions for my career advancement due to*
6 *childcare issues when he is at work. (P47, partner, F, 38y)*

11
12 Perhaps consequently, many participants described deterioration or dissolution of
13 relationships:

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17 *The FIFO roster was eventually the breaking point of our relationship. It's hard to*
18 *expect a partner to be okay with a half time person in a relationship. (P10, worker, F,*
19 *34y)*

24
25 Many workers described feelings of isolation and loneliness due to prolonged absence from
26 their families, which for some, reportedly manifested in anxiety or depression:

29
30 *My family feels safe when I'm home, I'm not lonely. I don't [have] anxiety when I'm*
31 *home. (P24, worker, M, 55y)*

34
35 Partners also described feelings of emotional strain:

37
38 *My concerns would be the impact it's had on my mental state of mind at times. Raising*
39 *three children on my own hasn't been easy. At times, you feel like you can't go on.*
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43 (P40, partner, F, 33y)

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46 The impact of FIFO on partners was an additional concern for many. Several workers
47 reported feeling guilty for delegating everyday domestic duties and responsibilities to their
48 partners (“[It] puts stress on my wife. She’s effectively a single mum for 2 weeks out of every
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three,” P51, worker, M, 44y), while partners worried about workers’ physical and mental

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3 health (“*Is he getting enough sleep, eating correctly, not drinking too much?*”, P43, partner,
4
5 F, 36y).

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8 **Theme III: “Others don’t understand how hard it is” – Social support needs.** Workers and
9
10 partners generally felt unsupported in negotiating health and wellbeing problems associated
11
12 with FIFO employment. Many participants felt that people not involved in FIFO work lack
13
14 sympathy and believe that the high income disqualifies any detrimental impacts:
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19 *It's difficult to help others understand how hard it is. [...] There's a perception that it's*
20
21 *the perfect lifestyle so why should FIFO workers complain.* (P13, worker, M, 38y)
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25 Some participants were also unsympathetic to fellow FIFO workers, attributing causality for
26
27 health and wellbeing problems to bad decision-making by workers:
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31 *[FIFO workers] need to think about what the job involves and stop blaming everyone*
32
33 *else when things get tough. They weren't made to take the job. [They] need to [stand]*
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35 *back and look at themselves and reassess their situation.* (P8, worker, M, 33y)
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40 Most participants reported receiving most support from their partners (“*we communicate very*
41
42 *well, we always support and encourage one another when times are tough, and know when to*
43
44 *give that support,*” P40, partner, F, 33y). However, a mutual lack of shared experience meant
45
46 that many workers felt that partners did not fully appreciate the impact of FIFO working, and
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48 conversely, many partners felt that workers did not fully appreciate the impact of an increased
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50 domestic burden:
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3 *Partners need to understand the stress workers are faced with, being away and then*
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5 *being home. (P27, worker, F, 55y)*
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9 *I have tried talking to my partner about how I feel and he cannot see my problem.*
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11 *(P56, partner, F, 56y)*
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15 Many workers and partners felt that FIFO employers were unsupportive, prioritising
16 productivity over workers' health and wellbeing, and offering only tokenistic support:
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22 *They don't always want to accept the responsibility. They preach all the stuff at*
23 *inductions [but] when it comes to applying it they turn a blind eye. (P3, worker, M,*
24 *26y)*
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31 *Employers spout about mental health, but are not lenient when concessions need to be*
32 *made for people with mental health issues. (P43, partner, F, 36y)*
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37 Many workers were reluctant to seek help for health or wellbeing issues. Some reported not
38 always being able to recognise when they required help (*"I had a stage where I was down*
39 *and I didn't even know it,"* P4, worker, M, 27y), as mental health issues were common among
40 workers (*"the struggles they face are what everyone else is feeling too."* P6, worker, M, 29y).
41
42 Some did not prioritise help-seeking, instead preferring to *"try to tough things out"* (P30,
43 worker, M, 61y). Others reported a 'macho' culture in which help-seeking was viewed as a
44 display of weakness, and felt that seeking help could cost them their job:
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3 *There is still some stigma attached to getting help due to the "manly" side of sucking it*
4 *up and getting on with the job. Those that have issues either keep it to themselves or*
5 *are labelled as not being able to cut it. (P26, worker, M, 52y)*
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11 *There is a bit of concern among workers that this [support] service is tracked by the*
12 *employer who uses it, and this may be a black mark against the person using the*
13 *service. The fear of losing your job because of mental health concerns is still very*
14 *relevant in mining. (P7, worker, M, 32y)*
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22 Workers felt that greater acknowledgement and empathy from management would encourage
23 more help-seeking:
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28 *The stigmas still surrounding mental health issues in mining prevent people accessing*
29 *services on site. If this culture was to improve and promote mental health as a major*
30 *health and safety topic in the workplace where people are comfortable talking about it*
31 *openly, this would be the main way to improve support for workers. (P7, worker, M,*
32 *32y)*
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41 Other suggestions offered by workers for improved support from employers included
42 providing dedicated support workers or a 'buddy system' for discussing health, greater choice
43 of shift patterns, and facilitating close communication with family:
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50 *Adequate communication infrastructure should be available to the people on site so*
51 *that partners can contact them at any time and vice versa. (P26, worker, M, 52y)*
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3 *Site visits [for family members] need to be more readily available. It would help the*
4
5 *families at home to see what their loved one goes away to. (P12, worker, F, 37y)*
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9 Several partners reported gaining social support through membership of specialist online
10 social networks (“Facebook has FIFO wife pages, which offer great support and advice,”
11 P50, partner, F, 43y). Connecting with others with similar experiences was felt to validate
12 partners’ concerns (“it just gives you relief, knowing you’re not the only one having a crappy
13 night or day,” P41, partner, F, 33y). Two partners, however, felt that online support networks
14 should be administered and moderated by employers, having faced hostility from others in an
15 informal FIFO social network (“I asked for some support ... [and] I was brutally attacked by
16 other members. I quickly deleted myself from the group,” P59, partner, F, 58y).
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26 Discussion

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29 Enhancing positive mental health and wellbeing in the workplace is recognized by the
30 WHO as a global research priority [21]. This study explored reflections among FIFO workers
31 and their partners on the mental health and wellbeing impact of FIFO work and strategies for
32 mitigating these concerns. FIFO work is characterized by prolonged periods of working long
33 daily hours away from home [2]. Workers commonly reported difficulty in adjusting between
34 their on- and off-shift roles and responsibilities. Both workers and partners spoke of the
35 development of psychological distance between workers and their partners and the strain this
36 placed on relationships. Feelings of isolation and loneliness were prevalent, along with
37 concerns of how FIFO work impacted communication between workers and their partners.
38
39 Workers and partners alike typically felt unsupported. There was scepticism of, and
40 reluctance to access, support provided by FIFO organizations, as well as a general feeling that
41 the general public is unsympathetic towards FIFO workers and families. Strategies deemed
42 useful for mitigating problems associated with FIFO work patterns included maintaining
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3 effective communication with partners, and receiving emotional and practical support from
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5 family members, neighbours, and other FIFO families. These findings provide a unique
6
7 insight into the methods used by workers and partners to navigate the adverse impacts of
8
9 FIFO and point to areas in which additional support may be needed.
10

11
12 Several aspects of the FIFO lifestyle were seen by our participants as potential threats
13
14 to mental health or wellbeing. Some workers reported feeling ‘trapped’, such that they were
15
16 unhappy in FIFO work but felt unable to take lower-paying alternative employment, having
17
18 grown accustomed to the high income levels provided by FIFO. The implicit trade-off
19
20 between financial constraints and job satisfaction is likely to compromise worker wellbeing.
21
22 These findings are in line with previous FIFO work research findings that job satisfaction and
23
24 perceived autonomy over career decisions are important determinants of workplace wellbeing
25
26 [22,23]. Participants did not report the methods that they use to seek to overcome feelings of
27
28 psychological entrapment. Nonetheless, theory proposes that people are likely to feel more
29
30 intrinsically motivated in work that provides feelings of autonomy, competence, and
31
32 relatedness. Thus, we recommend that FIFO organizations seek to reduce these feelings of
33
34 externally-regulated impositions through simple changes in the work climate to enhance
35
36 feelings of self-determination, competence and a meaningful social connection to others
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38 arising from FIFO work [24].
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41
42 Workers also reported difficulty in balancing the demands of FIFO working patterns
43
44 with domestic commitments. Many reported being unable to achieve a work-life balance. This
45
46 is often seen by workers to be the main disadvantage of FIFO work [9,10,22]. Our
47
48 participants commonly conceived of ‘work’ and ‘life’ as ‘separate worlds’, characterised by
49
50 different social roles, expectations, and patterns of behavior. While the perceptual ‘work’-
51
52 ‘life’ distinction is not specific to FIFO [e.g., 25], work-life transitional issues may perhaps be
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54 more pronounced, or have greater impact, among those working long hours or for prolonged
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3 periods away from home [26]. Partners also described challenges in adjusting their domestic
4
5 routines according to the presence or absence of FIFO workers. Both workers and partners
6
7 spoke of periods of disruption as they struggled to adjust to changes in established routines.
8
9 Participants did not report how they overcame these challenges. Training in maintaining a
10
11 comfortable work-life balance, and negotiating work-life transitions, may perhaps be useful
12
13 for FIFO workers and their partners [27].
14

15
16 For many participants, geographical distance, and the regular and prolonged absence
17
18 of FIFO workers led to psychological detachment of workers from their families. Similar
19
20 experiences have been documented among other long-distance commuters, such as long-haul
21
22 truckers and commercial fishermen [28]. This is likely to have multiple adverse effects on
23
24 wellbeing. Many participants felt isolated and lonely, a common experience among FIFO
25
26 workers [29]. Workers may also miss out on shared social experiences and feelings of
27
28 companionship, which have been shown to buffer against the adverse impact of everyday life
29
30 stressors [30]. FIFO organizations might alleviate these feelings of loneliness and enhance
31
32 social support for mental health by providing workers access to structured opportunities for
33
34 social contact (e.g., community-based recreation groups).
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38 Psychological distance also reportedly adversely affected the quality of relationships
39
40 between workers and their partners, potentially leading to tension and distrust. Some
41
42 participants were able to mitigate these impacts by maintaining close communication with
43
44 partners. Indeed, effective communication is a characteristic of cohesive and well-functioning
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46 families [17]. Yet, some workers felt unable to effectively communicate with their partners,
47
48 citing either a lack of shared experiences to discuss, or a lack of adequate on-site
49
50 communication infrastructure. FIFO organizations should acknowledge the importance of
51
52 regular communication for maintaining relationships by prioritizing the provision of access to
53
54 timely and private contact between on-shift workers and their families. Alternatively, as some
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3 participants suggested, organizations might allow families to visit FIFO sites. While costly to
4
5 administer, research suggests that on-site ‘family days’ provide partners with insight into
6
7 workers’ roles and responsibilities, such that they are better able to understand and empathize
8
9 with workers’ experiences and concerns [31]. Workers, too, report that such initiatives make
10
11 them feel valued and supported by employers [31].
12

13
14 Many participants felt that they lacked social support, which made it difficult to
15
16 negotiate the challenges posed by FIFO work. Previous research attests to the importance of
17
18 social support for maintaining mental health, especially in situations of high stress [32,33].
19
20 Our participants perceived the public to be unsympathetic to FIFO workers and their families,
21
22 and indeed, previous research has highlighted negative media portrayals of FIFO workers as
23
24 greedy and undeserving [34]. While participants acknowledged that support was available,
25
26 many were reluctant to access it, citing stigma around seeking support for mental health.
27
28 While stigma surrounding mental health and help-seeking is well-documented [35], this may
29
30 be especially pronounced in the typically male-oriented FIFO domain [4], as norms of
31
32 masculinity may further inhibit help-seeking for mental health [36]. Some partners reported
33
34 having obtained support using online social networks. Previous research has shown the
35
36 benefits of online support: while online forums should not be seen as a substitute for
37
38 professional mental health services, 75% of users of one Norwegian forum found it easier to
39
40 obtain support from an online forum than to discuss mental health problems in person [37].
41
42 User anonymity afforded by online forums can disinhibit help-seeking [38]. Conversely,
43
44 however, anonymity can also facilitate antisocial behavior; two partners in our sample
45
46 reported receiving abuse from members of an online forum. FIFO organisations should
47
48 consider funding professionally-moderated online support networks for FIFO workers and
49
50 their families, to minimise such problems. Professional involvement can also minimise the
51
52 possibility that users become dependent on the support of other forum members, and
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3 withdraw from in-person contact [38]. Furthermore, the administration of social support
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5 networks by FIFO organisations, or professionals allied to FIFO organisations, would allow
6
7 for the integration of structured activities conducive to mental health given the issues raised
8
9 by FIFO workers. This is important, because participation in shared activities fosters a sense
10
11 of control, belonging, self-esteem, and social support. These in turn can buffer against mental
12
13 health problems, just as strongly as can the sharing of thoughts and feelings with others [33].
14

15
16 Many workers did not feel supported by employers and were sceptical of the motives
17
18 of FIFO organisations, viewing them as ultimately unsympathetic to the mental health and
19
20 wellbeing needs of workers. Available support was viewed as tokenistic, and most workers
21
22 felt that their jobs would be under threat if they attempted to access support. This is
23
24 problematic, as organisational support (both actual and perceived) is central for achieving
25
26 health and wellbeing in the workplace [e.g., 39]. Cynicism towards workplace health policy
27
28 can arise from perceptions of senior management as lacking integrity, competence, or
29
30 trustworthiness. Cynicism may be overcome by adopting a more participatory approach to the
31
32 development and implementation of mental health support [40]. Employee involvement in
33
34 workplace health policy development would allow for integration of workers' experience and
35
36 knowledge, and may build trust between management and employees, so achieving greater
37
38 acceptance among the FIFO workforce.
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42 Limitations of our study must be acknowledged. We collected data via questions
43
44 probing domains that we deemed to be important to FIFO workers and their partners. These
45
46 questions may have neglected other relevant areas of the FIFO experience relevant to health
47
48 and wellbeing. Additionally, our survey design, whereby qualitative data were collected via
49
50 online free-text responses, did not allow us to probe further into participants' responses.
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52 While our participants cited various adverse impacts of FIFO work on their health and
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54 wellbeing, we cannot identify the mechanisms underlying such impact. It is plausible, for
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3 example, that FIFO poses risks to mental health and wellbeing only among workers with low
4
5 job satisfaction or perceived autonomy [22]. Additionally, while we sought to document
6
7 participants' coping strategies, in some instances – for example, where describing feelings of
8
9 psychological entrapment – no such strategies were cited. Semi-structured interviews, in
10
11 which participants can be asked to expand upon their responses, may have produced a deeper
12
13 insight into the issues we documented. A key advantage of our survey design, however, is that
14
15 we were able to collect data from participants situated across Australia, including those at
16
17 FIFO sites, with minimal inconvenience to participants. Additionally, our sample size was
18
19 relatively small, and the generalisability of findings is unclear. Our data may have been
20
21 influenced by selection bias, such that those who were most motivated to respond to our
22
23 survey were those with the most negative experiences. While the veracity of our analysis was
24
25 confirmed by a subsample of our participants, it is unclear whether the views documented
26
27 among our sample are representative of FIFO workers, or their partners, more broadly.
28
29 However, our aim was not to generate generalisable findings, but rather to document health
30
31 and wellbeing experiences pertinent to FIFO workers and their partners. Indeed, ours is the
32
33 first study to our knowledge to have explored the impact of FIFO on partners. Our findings
34
35 highlight the need for the provision of support to both workers and their partners.
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39
40 This study highlighted the mental health and wellbeing concerns raised by FIFO
41
42 workers and their partners, and the strategies they used to address these concerns, while
43
44 pointing to areas in which further support may be needed. FIFO organizations may need to
45
46 acknowledge, in a manner more visible and transparent to employees, the importance of
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48 worker health and wellbeing, and offer unconditional support to address their concerns. While
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50 many felt unsupported, some workers and their partners were able to mitigate the potential
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52 adverse impact of FIFO by maintaining close communication with partners, and securing
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54 emotional and practical support from others. FIFO organizations, and their employees, may
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benefit from implementing workplace health and wellbeing programs co-designed by management and employees, to address these concerns.

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Author Contributions

KLA, CV, and AR helped conceive of the idea of the study design, collected the data, and provided intellectual content for the manuscript. BG conducted the data analysis, assisted in interpreting the findings, and provided intellectual content for the manuscript.

Data Sharing Statement

Extra data is available by emailing the corresponding author (ALR).

Competing Interests Statement

The authors have no competing interests to declare.

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**Revised Standards for Quality Improvement Reporting Excellence (SQUIRE 2.0)
September 15, 2015**

Text Section and Item Name	Section or Item Description
Notes to authors	<ul style="list-style-type: none"> • The SQUIRE guidelines provide a framework for reporting new knowledge about how to improve healthcare • The SQUIRE guidelines are intended for reports that describe system level work to improve the quality, safety, and value of healthcare, and used methods to establish that observed outcomes were due to the intervention(s). • A range of approaches exists for improving healthcare. SQUIRE may be adapted for reporting any of these. • Authors should consider every SQUIRE item, but it may be inappropriate or unnecessary to include every SQUIRE element in a particular manuscript. • The SQUIRE Glossary contains definitions of many of the key words in SQUIRE. • The Explanation and Elaboration document provides specific examples of well-written SQUIRE items, and an in-depth explanation of each item. • Please cite SQUIRE when it is used to write a manuscript.
Title and Abstract	
1. Title P. 1	Indicate that the manuscript concerns an initiative to improve healthcare (broadly defined to include the quality, safety, effectiveness, patient-centeredness, timeliness, cost, efficiency, and equity of healthcare)
2. Abstract P. 2	<ol style="list-style-type: none"> a. Provide adequate information to aid in searching and indexing b. Summarize all key information from various sections of the text using the abstract format of the intended publication or a structured summary such as: background, local problem, methods, interventions, results, conclusions
Introduction	<i>Why did you start?</i>
3. Problem Description P. 4-5	Nature and significance of the local problem
4. Available knowledge P. 4-5	Summary of what is currently known about the problem , including relevant previous studies

<p>5. Rationale P. 4-6</p>	<p>Informal or formal frameworks, models, concepts, and/or theories used to explain the problem, any reasons or assumptions that were used to develop the intervention(s), and reasons why the intervention(s) was expected to work</p>
<p>6. Specific aims P.6</p>	<p>Purpose of the project and of this report</p>
<p>Methods</p>	<p><i>What did you do?</i></p>
<p>7. Context P. 6-7</p>	<p>Contextual elements considered important at the outset of introducing the intervention(s)</p>
<p>8. Intervention(s) N/A</p>	<p>a. Description of the intervention(s) in sufficient detail that others could reproduce it b. Specifics of the team involved in the work</p>
<p>9. Study of the Intervention(s) N/A</p>	<p>a. Approach chosen for assessing the impact of the intervention(s) b. Approach used to establish whether the observed outcomes were due to the intervention(s)</p>
<p>10. Measures P. 6-7</p>	<p>a. Measures chosen for studying processes and outcomes of the intervention(s), including rationale for choosing them, their operational definitions, and their validity and reliability b. Description of the approach to the ongoing assessment of contextual elements that contributed to the success, failure, efficiency, and cost c. Methods employed for assessing completeness and accuracy of data</p>
<p>11. Analysis P. 7-8</p>	<p>a. Qualitative and quantitative methods used to draw inferences from the data b. Methods for understanding variation within the data, including the effects of time as a variable</p>
<p>12. Ethical Considerations P. 7</p>	<p>Ethical aspects of implementing and studying the intervention(s) and how they were addressed, including, but not limited to, formal ethics review and potential conflict(s) of interest</p>
<p>Results</p>	<p><i>What did you find?</i></p>
<p>13. Results P. 8-17</p>	<p>a. Initial steps of the intervention(s) and their evolution over time (e.g., time-line diagram, flow chart, or table), including modifications made to the intervention during the project b. Details of the process measures and outcome c. Contextual elements that interacted with the intervention(s) d. Observed associations between outcomes, interventions, and relevant contextual elements e. Unintended consequences such as unexpected benefits, problems, failures, or costs associated with the intervention(s). f. Details about missing data</p>
<p>Discussion</p>	<p><i>What does it mean?</i></p>
<p>14. Summary P. 17-23</p>	<p>a. Key findings, including relevance to the rationale and specific aims b. Particular strengths of the project</p>

<p>15. Interpretation</p> <p>P. 17-20</p>	<p>a. Nature of the association between the intervention(s) and the outcomes</p> <p>b. Comparison of results with findings from other publications</p> <p>c. Impact of the project on people and systems</p> <p>d. Reasons for any differences between observed and anticipated outcomes, including the influence of context</p> <p>e. Costs and strategic trade-offs, including opportunity costs</p>
<p>16. Limitations</p> <p>P. 21-22</p>	<p>a. Limits to the generalizability of the work</p> <p>b. Factors that might have limited internal validity such as confounding, bias, or imprecision in the design, methods, measurement, or analysis</p> <p>c. Efforts made to minimize and adjust for limitations</p>
<p>17. Conclusions</p> <p>P 22-23</p>	<p>a. Usefulness of the work</p> <p>b. Sustainability</p> <p>c. Potential for spread to other contexts</p> <p>d. Implications for practice and for further study in the field</p> <p>e. Suggested next steps</p>
<p>Other information</p>	
<p>18. Funding</p> <p>Acknowledgments</p>	<p>Sources of funding that supported this work. Role, if any, of the funding organization in the design, implementation, interpretation, and reporting</p>

Table 2. Glossary of key terms used in SQUIRE 2.0. This Glossary provides the intended meaning of selected words and phrases as they are used in the SQUIRE 2.0 Guidelines. They may, and often do, have different meanings in other disciplines, situations, and settings.

Assumptions

Reasons for choosing the activities and tools used to bring about changes in healthcare services at the [system](#) level.

Context

Physical and sociocultural makeup of the local environment (for example, external environmental factors, organizational dynamics, collaboration, resources, leadership, and the like), and the interpretation of these factors (“sense-making”) by the healthcare delivery professionals, patients, and caregivers that can affect the effectiveness and [generalizability](#) of [intervention\(s\)](#).

Ethical aspects

The value of [system](#)-level [initiatives](#) relative to their potential for harm, burden, and cost to the stakeholders. Potential harms particularly associated with efforts to improve the quality, safety, and value of healthcare services include [opportunity costs](#), invasion of privacy, and staff distress resulting from disclosure of poor performance.

Generalizability

The likelihood that the [intervention\(s\)](#) in a particular report would produce similar results in other settings, situations, or environments (also referred to as external validity).

Healthcare improvement

Any systematic effort intended to raise the quality, safety, and value of healthcare services, usually done at the [system](#) level. We encourage the use of this phrase rather than “quality improvement,” which often refers to more narrowly defined approaches.

Inferences

The meaning of findings or data, as interpreted by the stakeholders in healthcare services – improvers, healthcare delivery professionals, and/or patients and families

Initiative

A broad term that can refer to organization-wide programs, narrowly focused projects, or the details of specific interventions (for example, planning, execution, and assessment)

Internal validity

Demonstrable, credible evidence for efficacy (meaningful impact or change) resulting from introduction of a specific intervention into a particular healthcare [system](#).

Intervention(s)

The specific activities and tools introduced into a healthcare [system](#) with the aim of changing its performance for the better. Complete description of an intervention includes its inputs, internal activities, and outputs (in the form of a logic model, for example), and the mechanism(s) by which these components are expected to produce changes in a [system's](#) performance.

Opportunity costs

1
2
3 Loss of the ability to perform other tasks or meet other responsibilities resulting from the diversion
4 of resources needed to introduce, test, or sustain a particular [improvement](#) initiative
5
6

7 **Problem**

8 Meaningful disruption, failure, inadequacy, distress, confusion or other dysfunction in a healthcare
9 service delivery [system](#) that adversely affects patients, staff, or the [system](#) as a whole, or that
10 prevents care from reaching its full potential
11

12 **Process**

13 The routines and other activities through which healthcare services are delivered
14
15

16 **Rationale**

17 Explanation of why particular [intervention\(s\)](#) were chosen and why it was expected to work, be
18 sustainable, and be replicable elsewhere.
19

20 **Systems**

21 The interrelated structures, people, [processes](#), and activities that together create healthcare services
22 for and with individual patients and populations. For example, systems exist from the personal self-
23 care system of a patient, to the individual provider-patient dyad system, to the microsystem, to the
24 macrosystem, and all the way to the market/social/insurance system. These levels are nested within
25 each other.
26
27

28 **Theory or theories**

29 Any “reason-giving” account that asserts causal relationships between variables (causal theory) or
30 that makes sense of an otherwise obscure [process](#) or situation (explanatory theory). Theories come
31 in many forms, and serve different purposes in the phases of [improvement](#) work. It is important to
32 be explicit and well-founded about any informal and formal theory (or theories) that are used.
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Mental health and wellbeing concerns of fly-in, fly-out workers and their partners: A qualitative study

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Manuscripts

Running Head: Fly-In Fly-Out Lifestyle

**Mental health and wellbeing concerns of fly-in, fly-out workers and their partners: A
qualitative study**

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Abstract

Objectives: Fly-in, fly-out (FIFO) work involves commuting long distances to the worksite, and living in provided accommodation for 1-4 weeks while on-shift. While the potentially detrimental impact of FIFO work on the health and wellbeing of workers has been documented, little attention has been paid to how workers, or their partners, cope with this impact. This study sought to investigate how workers and their partners negotiate the impact of FIFO on their mental health and wellbeing. **Methods:** Thirty-four FIFO workers (25 men, *M* age = 41 years) and twenty-six partners of FIFO workers (26 women, *M* age = 40 years) completed a set of open-ended questions about their concerns about the FIFO lifestyle, and the support they use. **Results:** Participant-validated thematic analysis generated three main themes: managing multiple roles, impact on mental health and wellbeing, and social support needs. Results revealed difficulties in adjusting between the responsibilities of perceptually distinct on- and off-shift lives, and managing potential psychological distance that develops while workers are on-site. Participants emphasised the importance of maintaining quality communication and support from family members. Workers and partners attempted to maintain mental health and wellbeing by regularly engaging with support networks, though many felt organisational support was tokenistic, stigmatised, or lacking. **Conclusions:** Recommendations for enhancing support provided by FIFO organisations are offered. In particular, organisations should emphasise the importance of good mental health and wellbeing, maintain transparency regarding potential challenges of FIFO lifestyles, and offer professional support for managing multiple social roles and effective communication.

Keywords: health; wellbeing; long-distance commuting; shift-work; relationship communication

Article Summary

Strengths and Limitations of the Study

- This is the first study to our knowledge to have explored the impact of long-distance commuting on both FIFO workers and partners.
- Study participants were situated across Australia, including those at FIFO sites.
- We collected data via questions probing domains that we deemed to be important to FIFO workers and their partners. These questions may have neglected other relevant areas of the FIFO experience relevant to health and wellbeing.
- While our participants cited various adverse impacts of FIFO work on their health and wellbeing, we cannot identify the mechanisms underlying such impact.
- This study highlighted the mental health and wellbeing concerns raised by FIFO workers and their partners, and the strategies they used to address these concerns, while pointing to areas in which further support may be needed.

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3 Mental health and wellbeing concerns of fly-in, fly-out workers and their partners: A
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5 qualitative study
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7 With unique work shifts come unique lifestyle situations. *Fly-In Fly-Out (FIFO)*; also
8 known as Drive-In Drive-Out; DIDO) work involves employees travelling long distances to
9 the worksite, living in provided accommodation during their on-shift roster, and travelling
10 home between shifts [1]. FIFO workers commonly have schedules of twelve-hour shifts for 1-
11 4 consecutive weeks [2]. Also termed long-distance commuting, FIFO work is becoming
12 increasingly prevalent in Australia, mostly as a result of the mining industry boom of the last
13 15 years, though it is also common in the construction and resource sectors [3]. Although
14 FIFO work is still relatively rare, in some Western Australian and Queensland communities
15 as many as one-in-six people are employed in FIFO positions [1,4]. Concerns have been
16 raised around the health and wellbeing impact of FIFO work [5,6], but evidence around the
17 impact on mental health and wellbeing of workers and their partners is in its infancy.
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30 Most FIFO workers are young or middle-aged men, a demographic already
31 particularly prone to mental health problems and at increased risk for suicide [4]. Industry
32 reports have suggested that there are few disadvantages to FIFO life other than potential
33 inconvenience of prolonged work shifts, and that there are many mental health benefits
34 including being a part of a challenging work environment, and unique opportunities to meet
35 new people, see new places, and earn a high income [5,7,8]. However, research suggests that
36 FIFO work has both costs and benefits for mental health and wellbeing [9, 10]. For example,
37 Torkington, Larkins and Sen Gupta [11] interviewed 11 FIFO workers about their
38 psychosocial wellbeing and perceived support. Some found their job rewarding and enjoyed
39 interactions with colleagues, but others experienced loneliness, fatigue, and problems in
40 balancing time away for work with social and family time. Other research has suggested that,
41 among workers with long shifts and low autonomy over their shift schedules, FIFO work can
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3 have negative repercussions for both work and home life [12]. Such problems may be
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5 compounded by a failure to access support; relative to non-FIFO workers, FIFO workers have
6
7 also been found to be less likely to report or seek help for mental health concerns [13].
8

9
10 FIFO work may also impact on the wellbeing of workers' significant others. Most
11
12 research on the impact of FIFO work on mental health or wellbeing has centred on workers'
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14 children. While one study [14] found no differences between FIFO families and non-FIFO
15
16 families in relationship quality, parenting competence or child emotional and behavioral
17
18 difficulties, another [15] showed that adolescent children's depressive symptoms and
19
20 emotional and behavioral difficulties could be partially attributed to the intermittent parental
21
22 absence that characterises FIFO employment. While these findings suggest that the extent of
23
24 impact of FIFO work on mental health may vary depending on the people involved and the
25
26 home and work contexts, they nonetheless point to the potential for FIFO work to impact on
27
28 family members.
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30
31 Kaczmarek and Sibbel [16] found that the wellbeing of FIFO workers' primary school
32
33 aged children did not significantly differ from that of similar families with a parent in the
34
35 military or from the general community. Yet, partners of the FIFO workers in this study
36
37 reported more problems with communication, support, and behavior control within the family
38
39 than did families from the military or the general community. Quantitative survey findings
40
41 from Israel and the United States suggests that FIFO work can have a modest negative impact
42
43 on couples' relationship satisfaction [17]. A case study in Canada found that FIFO couples
44
45 can face numerous challenges including transitioning between on-shift and off-shift roles and
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47 parenting [18].
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51 A study of people who had committed suicide compared Australian miners (of whom
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53 many were FIFO workers) to non-miners, and found that the miners were significantly more
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55 likely to have experienced relationship problems [19]. This demonstrates the potential
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3 interdependence of the mental health and wellbeing of FIFO workers and their partners, and
4
5 the complex and dynamic impact of FIFO work on workers and others.

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7 The unique lifestyle circumstances imposed by FIFO work have been associated with
8
9 potential mental health risks. Yet, little evidence exists regarding how best to support FIFO
10
11 workers and partners to navigate the complexities of FIFO life. Some evidence suggests that
12
13 family cohesion, connectedness, flexibility, and meaningful communication are important
14
15 factors for buffering from potential negative effects of FIFO life on wellbeing [20,21].
16
17 Quality family time, routines, social support networks and clear set boundaries also aid in the
18
19 adjustment and management of the FIFO lifestyle [20]. However, beyond this general
20
21 evidence about how families might cope with FIFO life, little has been documented regarding
22
23 how workers and partners can manage FIFO work to maintain positive mental health and
24
25 wellbeing.
26
27

28 **The Present Study**

29
30 The aim of this study was to develop understanding of how FIFO workers and their
31
32 partners experience and negotiate the impact of FIFO work on their mental health and
33
34 wellbeing. Understanding how workers and partners manage any negative consequences of
35
36 the FIFO lifestyle may be informative for intervention purposes, because it may reveal useful
37
38 coping strategies, while identifying areas in which support may be especially required.
39
40 Qualitative research methods were used to obtain a rich and in-depth insight into participants'
41
42 experiences.
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46 **Methods**

47 **Participants**

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49 Study recruitment was conducted with convenience sampling through FIFO-relevant
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51 online social media group pages and media outlets of regional Australian audiences (e.g.,
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53 radio, television, newspapers, websites). Eligibility was not contingent on both partners of a
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3 couple being involved in the study, making it possible that the partner of a FIFO worker may
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5 have participated despite the worker him or herself not doing so, and vice versa. In return for
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7 their involvement, participants were entered into a random draw for \$30 AUD (US\$24) gift
8
9 vouchers, a value which we deemed to be motivating, but not coercive, for potential
10
11 participants. No a priori sample size requirements were set.
12

13
14 The final dataset comprised 34 FIFO workers (25 men [79%], 9 women [21%], *M* age
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16 = 41y, *SD* = 11, age range = 25 – 65y) and 26 partners of FIFO workers (all women, *M* age =
17
18 40y, *SD* = 9, age range = 27 – 58y). The sample included 6 couples (i.e. 6 workers, 6
19
20 partners). The remaining 48 participants (28 FIFO workers, 20 partners) took part in the study
21
22 without the involvement of their partners. No participap. 7nts refused to participate or
23
24 withdrew from the study.
25

26 27 **Procedures**

28
29 Participants self-reported their age, sex and their (or their partner's) FIFO working
30
31 patterns (e.g., roster length) through an online survey. They were also asked whether overall,
32
33 they liked (their partner) being a FIFO worker or not (*yes/no*). Participants were then asked to
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35 respond to a set of questions about the FIFO lifestyle via email. We chose to collect data via
36
37 email to gain access to FIFO workers and partners situated across Australia, including those at
38
39 FIFO sites, with minimal inconvenience to participants. Additionally, the email-based survey
40
41 may have allowed participants to feel less identifiable when responding about potentially
42
43 stigmatizing mental health issues than is possible with face-to-face interviews.
44

45
46 The questions were developed for the purposes of this study and the full list of
47
48 questions are available as Supplemental File 1. Example questions include “Are you
49
50 concerned about how the FIFO lifestyle affects you?” and “Do you have suggestions on how
51
52 support for FIFO workers and FIFO partners could be made better?” Although these were not
53
54 open questions, participants were invited to provide free-text (rather than yes/no) responses,
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3 and all participants did so. The terms ‘mental health’ and ‘wellbeing’ did not feature in the
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5 questions, to minimise potential self-presentational concerns inhibiting disclosure of relevant
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7 issues. All participants provided informed consent prior to participating in the study and all
8
9 study procedures were approved a priori by the Central Queensland University Human
10
11 Research Ethics Committee.

12 13 **Analyses**

14
15 Responses were analysed by one researcher using thematic analysis procedures [22],
16
17 based on realist epistemological assumptions. The analyst was a UK-based social and health
18
19 psychologist with expertise in qualitative analysis (BG), who has no personal links to FIFO,
20
21 no history of research in this domain, and was unfamiliar with the FIFO research literature
22
23 prior to and during the analysis. The analyst was recruited to the research team after data had
24
25 been collected, to minimise the possibility that analysis would be influenced by our
26
27 preconceptions of FIFO or experiences of data collection. Responses were read and reread,
28
29 for familiarisation purposes. Line-by-line coding was undertaken to assign conceptual labels
30
31 to pertinent excerpts. As coding progressed, an inductively-derived thematic framework was
32
33 developed and iteratively refined to best reflect emergent insights. Themes were labelled in
34
35 part using representative phrases (i.e. ‘in vivo’ codes) taken verbatim from the data, to
36
37 demonstrate the veracity of the theme [23]. A second researcher (AR) inspected the final
38
39 coding framework and analysis, and verified that the themes were coherent representations of
40
41 the data. The final narrative was also verified, by two FIFO workers and three partners who
42
43 participated in the study, as a valid conceptual analysis of the FIFO experience.

44
45
46 Data excerpts are quoted below as evidence of the validity of the analysis [24]. To aid
47
48 clarity where necessary, punctuation was added, spelling mistakes corrected, and words added
49
50 in brackets to clarify intended meaning.
51
52
53

54 55 **Results**

Sample Description

FIFO workers most commonly worked either day shifts (48%) or a mixture of day and night shifts (48%). Only one worker exclusively worked night shifts. Workers' rosters were between 4 and 29 workdays on-shift ($M = 15$, $SD = 8$), with between 2 and 21 days off-shift ($M = 8$, $SD = 4$). More than half (62%) of workers reported that, overall they liked being a FIFO worker. Partners reported that their partners mostly worked day shifts (62%), with some working a mixture of day and night shifts (35%), and one person working nightshifts. Partners reported their FIFO worker partners to work between 6 and 60 workdays on-shift ($M = 20$, $SD = 12$), with between 5 and 21 days off-shift ($M = 8$, $SD = 4$). More than half (64%) of FIFO partners reported that overall they did not like that their partner was a FIFO worker. On average, participants' household income was AUD\$182,481 (US: ~\$143000; $SD =$ AUD\$56,905 [US \$44700]), with the range between AUD\$52-320,000 (US \$41-250,000). Workers' occupations included plant operators, managers, train drivers, heavy machinery operators, and specialists.

Thematic analysis

Three themes were extracted, relating to experiences of negotiating multiple social roles (theme 1), health and wellbeing issues surrounding FIFO employment (theme 2), and social support needs (theme 3).

Theme I: "I'm leading two lives" – Managing multiple roles. FIFO workers typically conceived of their work and home lives as two discrete 'worlds', characterised by different lifestyles, roles and responsibilities ("*I'm leading two personalities and two lives*"; participant 13 [P13], worker, male [M], 38 years old [38y]). Commonly described through a contrast with the domestic 'world,' the FIFO 'world' was seen to be more rigidly structured, but allowing greater personal freedom, due to provision of assistance for everyday domestic activities and the absence of immediate family commitments ("*I don't have to worry about*

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2
3 *cooking, cleaning etc.*,” P11, worker, M, 34y). The demands of these two ‘worlds’
4
5 necessitated the adoption of different social roles and patterns of behavior:
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7

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9 *At work I have enormous pressure to deal with so [I am] more aggressive and*
10
11 *business-oriented. I need to maintain a bravado in a male-dominated industry. At*
12
13 *home I have to be happy, supportive, caring, friendly and show empathy* (P13, worker,
14
15 M, 38y).
16
17

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19
20 *While away I can just be a bloke. [When I’m at] home I’m a family man* (P22, worker,
21
22 M, 47y).
23
24

25
26 Workers’ partners also described two ‘worlds,’ with the enhanced burden of domestic duties
27
28 and responsibilities imposed when workers are away requiring greater self-sufficiency
29
30 (“*[she’s] almost [a] pseudo single-parent, in certain circumstances,*” P26, worker, M, 52y).
31
32

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34
35 *My wife [says] “when he is away, I have to be strong and independent, service the*
36
37 *car, change the light bulbs, but when he comes home I am weak, defenceless and*
38
39 *dependent.”* (P32, worker, M, did not report age)
40
41

42
43
44 Several workers experienced difficulties in negotiating the transition between their two
45
46 ‘worlds’ when returning home from a shift, struggling to adjust to differences in the pace and
47
48 requirements of domestic life:
49
50

51
52 *The first few days [back home involve] trying to get up to speed with day to day life,*
53
54 *and a different routine.* (P19, worker, M, 42y)
55
56

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5 *It is sometimes difficult to readjust and function as an adult at home. By the time you*
6
7 *have adjusted, it is time to fly out again.* (P5, worker, M, 28y)
8
9

10
11 Similarly, some partners struggled to adjust their settled domestic routines to incorporate
12
13 workers' return home, which was a potential source of tension:
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15

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17
18 *When my partner comes home he feels like an outsider, as the kids and myself are in a*
19
20 *routine that differs from him. He tries to change things into his way of doing, which*
21
22 *creates havoc in the household.* (P50, partner, female [F], 43y)
23
24
25

26 Participants described a process of renegotiating domestic roles and responsibilities upon
27
28 workers' return, with some partners expressing frustration at FIFO workers for not assuming
29
30 greater domestic responsibility:
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34
35 *I work 3-5 days a week [and] I get mad at [him] sometimes as he is home and not*
36
37 *helping with household duties.* (P43, partner, F, 36y)
38
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40

41
42 **Theme II: “The FIFO roster was the breaking point” – Impact on mental health and**
43
44 **wellbeing.** For most workers and partners, financial gain was the primary benefit of FIFO
45
46 employment (“*I am only working this lifestyle to get ahead financially,*” P1, worker, M, 23y).
47
48 Income was a source of stress for some however, as they felt they had limited autonomy over
49
50 their employment and career, having become ‘trapped’ into undesirable working patterns by
51
52 becoming accustomed to high income (“*I am locked into this lifestyle now,*” P57, partner, F,
53
54 57y):
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3 *The golden handcuffs go on. As people earn more, they spend more, and take on*
4 *larger debt burdens, causing them to be trapped in the mining FIFO work lifestyle.*

5
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7 (P7, worker, M, 32y)
8
9

10 Indeed, many participants described adverse mental health and wellbeing effects of FIFO
11 employment. For many, absence from family was particularly detrimental. Workers,
12 particularly those with children, often felt that they were missing out on potentially significant
13 family events (*"I have missed out on a lot of living and memories with family,"* P57, worker,
14 M, 57y). Both workers and partners worried about the impact of the prolonged absence of one
15 parent on children's wellbeing and development (*"Will we have regrets later? Are they*
16 *missing out on more than we realise, having their Dad work away?"* P42, partner, F, 34y).
17
18 Workers also voiced concerns about being unable to respond to domestic emergencies while
19 on-shift:
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29
30 *We only have two flights here every week, Monday and Thursday. Once that window*
31 *to escape closes, you are trapped, and constantly hoping that nothing happens back*
32 *home.* (P18, worker, M, 42y)
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34
35
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38 Many participants felt that FIFO work put considerable strain on relationships with partners.
39 Many spoke of physical separation leading to a sense of psychological distance, such that they
40 felt *"disconnected"* (P51, partner, F, 44y), or were *"leading separate lives"* (P28, worker, M,
41 58y). Communication between workers and their partners was valued as a means of
42 maintaining relationships, but distance was often felt to reduce the quality of such
43 communication:
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51 *We talk every day, although I sometimes struggle to remain interested sometimes as*
52 *she is not in front of me, merely a voice on the phone. It can be a struggle to bring up*
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3 *subjects of conversation, as my day can be quite mundane yet her job as a teacher can*
4
5 *have so many events happen that she wants to tell me about. (P6, worker, M, 29y)*
6

7
8 *[The FIFO lifestyle] adds strain when we are both tired. If we were home we would*
9
10 *say nothing and hug but that's not possible through the telephone so it makes for*
11
12 *awkward phone calls. (P37, partner, F, 27y)*
13

14
15 Physical and psychological distance was reportedly a source of tension for many. Some
16
17 participants reported growing suspicious of their partner's fidelity ("*[I worry that] he'll get*
18
19 *bored and cheat on me,*" P41, partner, F, 33y), and others felt resentful towards their partners,
20
21 for failing to fully acknowledge the perceived sacrifices each makes for the family unit:
22

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24
25 *Absence doesn't make the heart grow fonder. When things get tough at home, the*
26
27 *resentment can sometimes creep in. (P46, partner, F, 38y)*
28

29
30 *I do resent the fact that he has a week off where he gets to do nothing. I am working*
31
32 *full time and raising our small child, which means I have been unable to attend a*
33
34 *number of training and workshop sessions for my career advancement due to*
35
36 *childcare issues when he is at work. (P47, partner, F, 38y)*
37

38
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40 Perhaps consequently, many participants described deterioration or dissolution of
41
42 relationships:
43

44
45 *The FIFO roster was eventually the breaking point of our relationship. It's hard to*
46
47 *expect a partner to be okay with a half time person in a relationship. (P10, worker, F,*
48
49 *34y)*
50

51
52 Many workers described feelings of isolation and loneliness due to prolonged absence from
53
54 their families, which for some, reportedly manifested in anxiety or depression:
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2
3 *My family feels safe when I'm home, I'm not lonely. I don't [have] anxiety when I'm*
4
5 *home. (P24, worker, M, 55y)*
6
7

8 Partners also described feelings of emotional strain:
9

10
11 *My concerns would be the impact it's had on my mental state of mind at times. Raising*
12
13 *three children on my own hasn't been easy. At times, you feel like you can't go on.*
14
15 *(P40, partner, F, 33y)*
16
17

18 The impact of FIFO on partners was an additional concern for many. Several workers
19 reported feeling guilty for delegating everyday domestic duties and responsibilities to their
20 partners (“*[It] puts stress on my wife. She's effectively a single mum for 2 weeks out of every*
21 *three,*” P51, worker, M, 44y), while partners worried about workers' physical and mental
22 health (“*Is he getting enough sleep, eating correctly, not drinking too much?*”, P43, partner,
23 F, 36y).
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31
32 **Theme III: “Others don't understand how hard it is” – Social support needs.** Workers and
33 partners generally felt unsupported in negotiating health and wellbeing problems associated
34 with FIFO employment. Many participants felt that people not involved in FIFO work lack
35 sympathy and believe that the high income disqualifies any detrimental impacts:
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43 *It's difficult to help others understand how hard it is. [...] There's a perception that it's*
44 *the perfect lifestyle so why should FIFO workers complain. (P13, worker, M, 38y)*
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49 Some participants were also unsympathetic to fellow FIFO workers, attributing causality for
50 health and wellbeing problems to bad decision-making by workers:
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3 *[FIFO workers] need to think about what the job involves and stop blaming everyone*
4
5 *else when things get tough. They weren't made to take the job. [They] need to [stand]*
6
7 *back and look at themselves and reassess their situation. (P8, worker, M, 33y)*
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10
11 Most participants reported receiving most support from their partners (“*we communicate very*
12 *well, we always support and encourage one another when times are tough, and know when to*
13 *give that support,*” P40, partner, F, 33y). However, a mutual lack of shared experience meant
14
15 that many workers felt that partners did not fully appreciate the impact of FIFO working, and
16
17 conversely, many partners felt that workers did not fully appreciate the impact of an increased
18
19 domestic burden:
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26 *Partners need to understand the stress workers are faced with, being away and then*
27
28 *being home. (P27, worker, F, 55y)*
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33 *I have tried talking to my partner about how I feel and he cannot see my problem.*
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35 *(P56, partner, F, 56y)*
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39 Many workers and partners felt that FIFO employers were unsupportive, prioritising
40
41 productivity over workers’ health and wellbeing, and offering only tokenistic support:
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46 *They don't always want to accept the responsibility. They preach all the stuff at*
47
48 *inductions [but] when it comes to applying it they turn a blind eye. (P3, worker, M,*
49
50 *26y)*
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3 *Employers spout about mental health, but are not lenient when concessions need to be*
4
5 *made for people with mental health issues. (P43, partner, F, 36y)*
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9 Many workers were reluctant to seek help for health or wellbeing issues. Some reported not
10 always being able to recognise when they required help (*"I had a stage where I was down*
11 *and I didn't even know it,"* P4, worker, M, 27y), as mental health issues were common among
12 workers (*"the struggles they face are what everyone else is feeling too."* P6, worker, M, 29y).
13 Some did not prioritise help-seeking, instead preferring to *"try to tough things out"* (P30,
14 worker, M, 61y). Others reported a 'macho' culture in which help-seeking was viewed as a
15 display of weakness, and felt that seeking help could cost them their job:
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26 *There is still some stigma attached to getting help due to the "manly" side of sucking it*
27 *up and getting on with the job. Those that have issues either keep it to themselves or*
28 *are labelled as not being able to cut it. (P26, worker, M, 52y)*
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35 *There is a bit of concern among workers that this [support] service is tracked by the*
36 *employer who uses it, and this may be a black mark against the person using the*
37 *service. The fear of losing your job because of mental health concerns is still very*
38 *relevant in mining. (P7, worker, M, 32y)*
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46 Workers felt that greater acknowledgement and empathy from management would encourage
47 more help-seeking:
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52 *The stigmas still surrounding mental health issues in mining prevent people accessing*
53 *services on site. If this culture was to improve and promote mental health as a major*
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3 *health and safety topic in the workplace where people are comfortable talking about it*
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5 *openly, this would be the main way to improve support for workers. (P7, worker, M,*
6
7 *32y)*
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10
11 Other suggestions offered by workers for improved support from employers included
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13 providing dedicated support workers or a ‘buddy system’ for discussing health, greater choice
14
15 of shift patterns, and facilitating close communication with family:
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20 *Adequate communication infrastructure should be available to the people on site so*
21
22 *that partners can contact them at any time and vice versa. (P26, worker, M, 52y)*
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26 *Site visits [for family members] need to be more readily available. It would help the*
27
28 *families at home to see what their loved one goes away to. (P12, worker, F, 37y)*
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32
33 Several partners reported gaining social support through membership of specialist online
34
35 social networks (“*Facebook has FIFO wife pages, which offer great support and advice,*”
36
37 P50, partner, F, 43y). Connecting with others with similar experiences was felt to validate
38
39 partners’ concerns (“*it just gives you relief, knowing you’re not the only one having a crappy*
40
41 *night or day,*” P41, partner, F, 33y). Two partners, however, felt that online support networks
42
43 should be administered and moderated by employers, having faced hostility from others in an
44
45 informal FIFO social network (“*I asked for some support ... [and] I was brutally attacked by*
46
47 *other members. I quickly deleted myself from the group,*” P59, partner, F, 58y).
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50 Discussion

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52 Enhancing positive mental health and wellbeing in the workplace is recognized by the
53
54 WHO as a global research priority [25]. This study explored reflections among FIFO workers
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1
2
3 and their partners on the mental health and wellbeing impact of FIFO work and strategies for
4 mitigating these concerns. FIFO work is characterized by prolonged periods of working long
5 daily hours away from home [2]. Workers commonly reported difficulty in adjusting between
6 their on- and off-shift roles and responsibilities. Both workers and partners spoke of the
7 development of psychological distance between workers and their partners and the strain this
8 placed on relationships. Feelings of isolation and loneliness were prevalent, along with
9 concerns of how FIFO work impacted communication between workers and their partners.
10 Workers and partners alike typically felt unsupported. There was scepticism of, and
11 reluctance to access, support provided by FIFO organizations, as well as a general feeling that
12 the general public is unsympathetic towards FIFO workers and families. Strategies deemed
13 useful for mitigating problems associated with FIFO work patterns included maintaining
14 effective communication with partners, and receiving emotional and practical support from
15 family members, neighbours, and other FIFO families. These findings provide a unique
16 insight into the methods used by workers and partners to navigate the adverse impacts of
17 FIFO and point to areas in which additional support may be needed.

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Several aspects of the FIFO lifestyle were seen by our participants as potential threats
to mental health or wellbeing. Some workers reported feeling ‘trapped’, such that they were
unhappy in FIFO work but felt unable to take lower-paying alternative employment, having
grown accustomed to the high income levels provided by FIFO. The implicit trade-off
between financial constraints and job satisfaction is likely to compromise worker wellbeing.
These findings are in line with previous FIFO work research findings that job satisfaction and
perceived autonomy over career decisions are important determinants of workplace wellbeing
[26,27]. Participants did not report the methods that they use to seek to overcome feelings of
psychological entrapment. Nonetheless, theory proposes that people are likely to feel more
intrinsically motivated in work that provides feelings of autonomy, competence, and

1
2
3 relatedness. Thus, we recommend that FIFO organizations seek to reduce these feelings of
4
5 externally-regulated impositions through simple changes in the work climate to enhance
6
7 feelings of self-determination, competence and a meaningful social connection to others
8
9 arising from FIFO work [28].
10

11
12 Workers also reported difficulty in balancing the demands of FIFO working patterns
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14 with domestic commitments. Many reported being unable to achieve a work-life balance. This
15
16 is often seen by workers to be the main disadvantage of FIFO work [11,12,26]. Our
17
18 participants commonly conceived of 'work' and 'life' as 'separate worlds', characterised by
19
20 different social roles, expectations, and patterns of behavior. While the perceptual 'work'-
21
22 'life' distinction is not specific to FIFO [e.g., 29], work-life transitional issues may perhaps be
23
24 more pronounced, or have greater impact, among those working long hours or for prolonged
25
26 periods away from home [30]. Partners also described challenges in adjusting their domestic
27
28 routines according to the presence or absence of FIFO workers. Both workers and partners
29
30 spoke of periods of disruption as they struggled to adjust to changes in established routines.
31
32 Participants did not report how they overcame these challenges. Training in maintaining a
33
34 comfortable work-life balance, and negotiating work-life transitions, may perhaps be useful
35
36 for FIFO workers and their partners [31].
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40 For many participants, geographical distance, and the regular and prolonged absence
41
42 of FIFO workers led to psychological detachment of workers from their families. Similar
43
44 experiences have been documented among other long-distance commuters, such as long-haul
45
46 truckers and commercial fishermen [18,32]. This is likely to have multiple adverse effects on
47
48 wellbeing. Many participants felt isolated and lonely, a common experience among FIFO
49
50 workers [33]. Workers may also miss out on shared social experiences and feelings of
51
52 companionship, which have been shown to buffer against the adverse impact of everyday life
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54 stressors [34]. Modern advancements in communication (e.g., video calls, social media) may
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3 help reduce, but not fully alleviate, some of the concerns of geographical distance for FIFO
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5 workers and their partners [18]. FIFO organizations might alleviate these feelings of
6
7 loneliness and enhance social support for mental health by providing workers access to
8
9 structured opportunities for social contact (e.g., community-based recreation groups).
10

11
12 Psychological distance also reportedly adversely affected the quality of relationships
13
14 between workers and their partners, potentially leading to tension and distrust. Some
15
16 participants were able to mitigate these impacts by maintaining close communication with
17
18 partners. Indeed, effective communication is a characteristic of cohesive and well-functioning
19
20 families [21]. Yet, some workers felt unable to effectively communicate with their partners,
21
22 citing either a lack of shared experiences to discuss, or a lack of adequate on-site
23
24 communication infrastructure. FIFO organizations should acknowledge the importance of
25
26 regular communication for maintaining relationships by prioritizing the provision of access to
27
28 timely and private contact between on-shift workers and their families. Alternatively, as some
29
30 participants suggested, organizations might allow families to visit FIFO sites. While costly to
31
32 administer, research suggests that on-site ‘family days’ provide partners with insight into
33
34 workers’ roles and responsibilities, such that they are better able to understand and empathize
35
36 with workers’ experiences and concerns [35]. Workers, too, report that such initiatives make
37
38 them feel valued and supported by employers [35].
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41
42 Many participants felt that they lacked social support, which made it difficult to
43
44 negotiate the challenges posed by FIFO work. Previous research attests to the importance of
45
46 social support for maintaining mental health, especially in situations of high stress [36,37].
47
48 Our participants perceived the public to be unsympathetic to FIFO workers and their families,
49
50 and indeed, previous research has highlighted negative media portrayals of FIFO workers as
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52 greedy and undeserving [38]. While participants acknowledged that support was available,
53
54 many were reluctant to access it, citing stigma around seeking support for mental health.
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3 While stigma surrounding mental health and help-seeking is well-documented [39], this may
4 be especially pronounced in the typically male-oriented FIFO domain [4], as norms of
5 masculinity may further inhibit help-seeking for mental health [40]. Some partners reported
6 having obtained support using online social networks. Previous research has shown the
7 benefits of online support: while online forums should not be seen as a substitute for
8 professional mental health services, 75% of users of one Norwegian forum found it easier to
9 obtain support from an online forum than to discuss mental health problems in person [41].
10 User anonymity afforded by online forums can disinhibit help-seeking [42]. Conversely,
11 however, anonymity can also facilitate antisocial behavior; two partners in our sample
12 reported receiving abuse from members of an online forum. FIFO organisations should
13 consider funding professionally-moderated online support networks for FIFO workers and
14 their families, to minimise such problems. Professional involvement can also minimise the
15 possibility that users become dependent on the support of other forum members, and
16 withdraw from in-person contact [42]. Furthermore, the administration of social support
17 networks by FIFO organisations, or professionals allied to FIFO organisations, would allow
18 for the integration of structured activities conducive to mental health given the issues raised
19 by FIFO workers. This is important, because participation in shared activities fosters a sense
20 of control, belonging, self-esteem, and social support. These in turn can buffer against mental
21 health problems, just as strongly as can the sharing of thoughts and feelings with others [37].

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44 Many workers did not feel supported by employers and were sceptical of the motives
45 of FIFO organisations, viewing them as ultimately unsympathetic to the mental health and
46 wellbeing needs of workers. Available support was viewed as tokenistic, and most workers
47 felt that their jobs would be under threat if they attempted to access support. This is
48 problematic, as organisational support (both actual and perceived) is central for achieving
49 health and wellbeing in the workplace [e.g., 43]. Cynicism towards workplace health policy
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3 can arise from perceptions of senior management as lacking integrity, competence, or
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5 trustworthiness. Cynicism may be overcome by adopting a more participatory approach to the
6
7 development and implementation of mental health support [44]. Employee involvement in
8
9 workplace health policy development would allow for integration of workers' experience and
10
11 knowledge, and may build trust between management and employees, so achieving greater
12
13 acceptance among the FIFO workforce.
14

15 **Study Limitations and Recommendations for Future Study Directions**

16
17
18 Limitations of our study must be acknowledged. We collected data via questions
19
20 probing domains that we deemed to be important to FIFO workers and their partners. These
21
22 questions may have neglected other relevant areas of the FIFO experience relevant to health
23
24 and wellbeing. Additionally, our survey design, whereby qualitative data were collected via
25
26 online free-text responses, did not allow us to probe further into participants' responses.
27
28 While our participants cited various adverse impacts of FIFO work on their health and
29
30 wellbeing, we cannot identify the mechanisms underlying such impact. It is plausible, for
31
32 example, that FIFO poses risks to mental health and wellbeing only among workers with low
33
34 job satisfaction or perceived autonomy [22]. Additionally, while we sought to document
35
36 participants' coping strategies, in some instances – for example, where describing feelings of
37
38 psychological entrapment – no such strategies were cited. Semi-structured interviews, in
39
40 which participants can be asked to expand upon their responses, may have produced a deeper
41
42 insight into the issues we documented and future such research will be important for
43
44 elaborating on these study findings. Additionally, our sample size was relatively small, and
45
46 the generalisability of findings is unclear. There are likely unique mental health and wellbeing
47
48 concerns for FIFO workers in different regions, roster lengths, and occupations [17]. Our data
49
50 may have been influenced by selection bias, such that those who were most motivated to
51
52 respond to our survey were those with the most negative experiences. While the veracity of
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3 our analysis was confirmed by a subsample of our participants, it is unclear whether the views
4
5 documented among our sample are representative of FIFO workers, or their partners, more
6
7 broadly. However, our aim was not to generate generalisable findings, but rather to document
8
9 health and wellbeing experiences pertinent to FIFO workers and their partners. Indeed, ours is
10
11 the first study to our knowledge to have explored the impact of FIFO on partners. Our
12
13 findings highlight the need for the provision of support to both workers and their partners.
14

15
16 This study highlighted the mental health and wellbeing concerns raised by FIFO
17
18 workers and their partners, and the strategies they used to address these concerns, while
19
20 pointing to areas in which further support may be needed. FIFO organizations may need to
21
22 acknowledge, in a manner more visible and transparent to employees, the importance of
23
24 worker health and wellbeing, and offer unconditional support to address their concerns. While
25
26 many felt unsupported, some workers and their partners were able to mitigate the potential
27
28 adverse impact of FIFO by maintaining close communication with partners, and securing
29
30 emotional and practical support from others. FIFO organizations, and their employees, may
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32 benefit from implementing workplace health and wellbeing programs co-designed by
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34 management and employees, to address these concerns.
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Author Contributions

KLA, CV, and AR helped conceive of the idea of the study design, collected the data, and provided intellectual content for the manuscript. BG conducted the data analysis, assisted in interpreting the findings, and provided intellectual content for the manuscript. All authors were involved in drafting the manuscript and revising it critically for important intellectual content and gave approval of the final version to be published.

Data Sharing Statement

Extra data is available by emailing the corresponding author (ALR).

Competing Interests Statement

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Supplemental File – Open response survey

1. Are you concerned about how the FIFO lifestyle affects you?
2. What concerns you the most about the FIFO lifestyle?
3. Are you concerned about how the FIFO lifestyle affects your partner?
4. Is there anything in particular that worries you about FIFO and your relationship?
5. Do you feel there is adequate support for those experiencing difficulties due to the FIFO lifestyle?
6. Do you think people seek the help they need?
7. What barriers do you think holds them back from seeking the support?
8. Do you have suggestions on how support for FIFO workers and FIFO partners could be made better?

COREQ (CONsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
<i>Personal characteristics</i>			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	
Occupation	3	What was their occupation at the time of the study?	
Gender	4	Was the researcher male or female?	
Experience and training	5	What experience or training did the researcher have?	
<i>Relationship with participants</i>			
Relationship established	6	Was a relationship established prior to study commencement?	
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	
Interviewer characteristics	8	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	
Domain 2: Study design			
<i>Theoretical framework</i>			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	
<i>Participant selection</i>			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	
<i>Setting</i>			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	
<i>Data collection</i>			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	
Repeat interviews	18	Were repeat interviews carried out? If yes, how many?	
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the interview or focus group?	
Duration	21	What was the duration of the interviews or focus group?	
Data saturation	22	Was data saturation discussed?	
Transcripts returned	23	Were transcripts returned to participants for comment and/or	

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
<i>Data analysis</i>			
Number of data coders	24	How many data coders coded the data?	
Description of the coding tree	25	Did authors provide a description of the coding tree?	
Derivation of themes	26	Were themes identified in advance or derived from the data?	
Software	27	What software, if applicable, was used to manage the data?	
Participant checking	28	Did participants provide feedback on the findings?	
<i>Reporting</i>			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	
Data and findings consistent	30	Was there consistency between the data presented and the findings?	
Clarity of major themes	31	Were major themes clearly presented in the findings?	
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

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BMJ Open

Mental health and wellbeing concerns of fly-in, fly-out workers and their partners in Australia: A qualitative study

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3 Running Head: Fly-In Fly-Out Lifestyle
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15 **Mental health and wellbeing concerns of fly-in, fly-out workers and their partners in**

16 **Australia: A qualitative study**
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Abstract

Objectives: Fly-in, fly-out (FIFO) work involves commuting long distances to the worksite, and living in provided accommodation for 1-4 weeks while on-shift. While the potentially detrimental impact of FIFO work on the health and wellbeing of workers has been documented, little attention has been paid to how workers, or their partners, cope with this impact. This study sought to investigate how workers and their partners negotiate the impact of FIFO on their mental health and wellbeing. **Design:** The study design was qualitative. FIFO workers and partners responded to open-ended questions about concerns about the FIFO lifestyle and the support they use. **Setting:** Australian FIFO workers and partners responded to the questions via email. **Participants:** Participants were 34 FIFO workers (25 men, *M* age = 41 years) and 26 partners of FIFO workers (26 women, *M* age = 40 years). **Results:** Participant-validated thematic analysis generated three main themes: managing multiple roles, impact on mental health and wellbeing, and social support needs. Results revealed difficulties in adjusting between the responsibilities of perceptually distinct on- and off-shift lives, and managing potential psychological distance that develops while workers are on-site. Participants emphasised the importance of maintaining quality communication and support from family members. Workers and partners attempted to maintain mental health and wellbeing by regularly engaging with support networks, though many felt organisational support was tokenistic, stigmatised, or lacking. **Conclusions:** Recommendations for enhancing support provided by FIFO organisations are offered. In particular, organisations should emphasise the importance of good mental health and wellbeing, maintain transparency regarding potential challenges of FIFO lifestyles, and offer professional support for managing multiple social roles and effective communication.

Keywords: health; wellbeing; long-distance commuting; shift-work; relationship communication

Strengths and Limitations of the Study

- This is the first study to our knowledge to have explored the impact of long-distance commuting on both FIFO workers and partners.
- Study participants were situated across Australia, including those at FIFO sites.
- We collected data via questions probing domains that we deemed to be important to FIFO workers and their partners. These questions may have neglected other relevant areas of the FIFO experience relevant to health and wellbeing.
- While our participants cited various adverse impacts of FIFO work on their health and wellbeing, we cannot identify the mechanisms underlying such impact.

Mental health and wellbeing concerns of fly-in, fly-out workers and their partners in
Australia: A qualitative study

With unique work shifts come unique lifestyle situations. *Fly-In Fly-Out (FIFO)*; also known as Drive-In Drive-Out; DIDO) work involves employees travelling long distances to the worksite, living in provided accommodation during their on-shift roster, and travelling home between shifts [1]. FIFO workers commonly have schedules of twelve-hour shifts for 1-4 consecutive weeks [2]. Also termed long-distance commuting, FIFO work is becoming increasingly prevalent in Australia, mostly as a result of the mining industry boom of the last 15 years, though it is also common in the construction and resource sectors [3]. Although FIFO work is still relatively rare, in some Western Australian and Queensland communities as many as one-in-six people are employed in FIFO positions [1,4]. Concerns have been raised around the health and wellbeing impact of FIFO work [5,6], but evidence around the impact on mental health and wellbeing of workers and their partners is in its infancy.

Most FIFO workers are young or middle-aged men, a demographic already particularly prone to mental health problems and at increased risk for suicide [4]. Industry reports have suggested that there are few disadvantages to FIFO life other than potential inconvenience of prolonged work shifts, and that there are many mental health benefits including being a part of a challenging work environment, and unique opportunities to meet new people, see new places, and earn a high income [5,7,8]. However, research suggests that FIFO work has both costs and benefits for mental health and wellbeing [9, 10]. For example, Torkington, Larkins and Sen Gupta [11] interviewed 11 FIFO workers about their psychosocial wellbeing and perceived support. Some found their job rewarding and enjoyed interactions with colleagues, but others experienced loneliness, fatigue, and problems in balancing time away for work with social and family time. Other research has suggested that, among workers with long shifts and low autonomy over their shift schedules, FIFO work can

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2
3 have negative repercussions for both work and home life [12]. Such problems may be
4
5 compounded by a failure to access support; relative to non-FIFO workers, FIFO workers have
6
7 also been found to be less likely to report or seek help for mental health concerns [13].
8

9
10 FIFO work may also impact on the wellbeing of workers' significant others. Most
11
12 research on the impact of FIFO work on mental health or wellbeing has centred on workers'
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14 children. While one study [14] found no differences between FIFO families and non-FIFO
15
16 families in relationship quality, parenting competence or child emotional and behavioral
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18 difficulties, another [15] showed that adolescent children's depressive symptoms and
19
20 emotional and behavioral difficulties could be partially attributed to the intermittent parental
21
22 absence that characterises FIFO employment. While these findings suggest that the extent of
23
24 impact of FIFO work on mental health may vary depending on the people involved and the
25
26 home and work contexts, they nonetheless point to the potential for FIFO work to impact on
27
28 family members.
29

30
31 Kaczmarek and Sibbel [16] found that the wellbeing of FIFO workers' primary school
32
33 aged children did not significantly differ from that of similar families with a parent in the
34
35 military or from the general community. Yet, partners of the FIFO workers in this study
36
37 reported more problems with communication, support, and behavior control within the family
38
39 than did families from the military or the general community. Quantitative survey findings
40
41 from Israel and the United States suggests that FIFO work can have a modest negative impact
42
43 on couples' relationship satisfaction [17]. A case study in Canada found that FIFO couples
44
45 can face numerous challenges including transitioning between on-shift and off-shift roles and
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47 parenting [18].
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50 A study of people who had committed suicide compared Australian miners (of whom
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52 many were FIFO workers) to non-miners, and found that the miners were significantly more
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54 likely to have experienced relationship problems [19]. This demonstrates the potential
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3 interdependence of the mental health and wellbeing of FIFO workers and their partners, and
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5 the complex and dynamic impact of FIFO work on workers and others.

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7 The unique lifestyle circumstances imposed by FIFO work have been associated with
8
9 potential mental health risks. Yet, little evidence exists regarding how best to support FIFO
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11 workers and partners to navigate the complexities of FIFO life. Some evidence suggests that
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13 family cohesion, connectedness, flexibility, and meaningful communication are important
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15 factors for buffering from potential negative effects of FIFO life on wellbeing [20,21].
16
17 Quality family time, routines, social support networks and clear set boundaries also aid in the
18
19 adjustment and management of the FIFO lifestyle [20]. However, beyond this general
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21 evidence about how families might cope with FIFO life, little has been documented regarding
22
23 how workers and partners can manage FIFO work to maintain positive mental health and
24
25 wellbeing.
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28 **The Present Study**

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30 The aim of this study was to develop understanding of how FIFO workers and their
31
32 partners experience and negotiate the impact of FIFO work on their mental health and
33
34 wellbeing. Understanding how workers and partners manage any negative consequences of
35
36 the FIFO lifestyle may be informative for intervention purposes, because it may reveal useful
37
38 coping strategies, while identifying areas in which support may be especially required.
39
40 Qualitative research methods were used to obtain a rich and in-depth insight into participants'
41
42 experiences.
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45 **Methods**

46 **Participants**

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48 Study recruitment was conducted with convenience sampling through FIFO-relevant
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50 online social media group pages and media outlets of regional Australian audiences (e.g.,
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52 radio, television, newspapers, websites). Eligibility was not contingent on both partners of a
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3 couple being involved in the study, making it possible that the partner of a FIFO worker may
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5 have participated despite the worker him or herself not doing so, and vice versa. In return for
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7 their involvement, participants were entered into a random draw for \$30 AUD (US\$24) gift
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9 vouchers, a value which we deemed to be motivating, but not coercive, for potential
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11 participants. No a priori sample size requirements were set.
12

13 **Procedures**

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15 Participants self-reported their age, sex and their (or their partner's) FIFO working
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17 patterns (e.g., roster length) through an online survey. They were also asked whether overall,
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19 they liked (their partner) being a FIFO worker or not (*yes/no*). Participants were then asked to
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21 respond to a set of questions about the FIFO lifestyle via email. We chose to collect data via
22
23 email to gain access to FIFO workers and partners situated across Australia, including those at
24
25 FIFO sites, with minimal inconvenience to participants. Additionally, the email-based survey
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27 may have allowed participants to feel less identifiable when responding about potentially
28
29 stigmatizing mental health issues than is possible with face-to-face interviews.
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33 The questions were developed for the purposes of this study and the full list of
34
35 questions are available as Supplemental File 1. Example questions include “Are you
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37 concerned about how the FIFO lifestyle affects you?” and “Do you have suggestions on how
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39 support for FIFO workers and FIFO partners could be made better?” Although these were not
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41 open questions, participants were invited to provide free-text (rather than *yes/no*) responses,
42
43 and all participants did so. The terms ‘mental health’ and ‘wellbeing’ did not feature in the
44
45 questions, to minimise potential self-presentational concerns inhibiting disclosure of relevant
46
47 issues. All participants provided informed consent prior to participating in the study and all
48
49 study procedures were approved a priori by the Central Queensland University Human
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51 Research Ethics Committee.
52
53

54 **Analyses**

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2
3 Responses were analysed by one researcher using thematic analysis procedures [22],
4 based on realist epistemological assumptions. The analyst was a UK-based social and health
5 psychologist with expertise in qualitative analysis (BG), who has no personal links to FIFO,
6 no history of research in this domain, and was unfamiliar with the FIFO research literature
7 prior to and during the analysis. The analyst was recruited to the research team after data had
8 been collected, to minimise the possibility that analysis would be influenced by
9 preconceptions of FIFO or experiences of data collection. Responses were read and reread,
10 for familiarisation purposes. Line-by-line coding was undertaken to assign conceptual labels
11 to pertinent excerpts. As coding progressed, an inductively-derived thematic framework was
12 developed and iteratively refined to best reflect emergent insights. Themes were labelled in
13 part using representative phrases (i.e. 'in vivo' codes) taken verbatim from the data, to
14 demonstrate the veracity of the theme [23]. A second researcher (AR) inspected the final
15 coding framework and analysis, and verified that the themes were coherent representations of
16 the data. The final narrative was also verified, by two FIFO workers and three partners who
17 participated in the study, as a valid conceptual analysis of the FIFO experience.

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Data excerpts are quoted below as evidence of the validity of the analysis [24]. To aid
clarity where necessary, punctuation was added, spelling mistakes corrected, and words added
in brackets to clarify intended meaning.

Results

The final dataset comprised 34 FIFO workers (25 men [79%], 9 women [21%], *M* age = 41y, *SD* = 11, age range = 25 – 65y) and 26 partners of FIFO workers (all women, *M* age = 40y, *SD* = 9, age range = 27 – 58y). The sample included 6 couples (i.e. 6 workers, 6 partners). The remaining 48 participants (28 FIFO workers, 20 partners) took part in the study without the involvement of their partners. No participant withdrew from the study.

Sample Description

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2
3 FIFO workers most commonly worked either day shifts (48%) or a mixture of day and
4
5 night shifts (48%). Only one worker exclusively worked night shifts. Workers' rosters were
6
7 between 4 and 29 workdays on-shift ($M = 15, SD = 8$), with between 2 and 21 days off-shift
8
9 ($M = 8, SD = 4$). More than half (62%) of workers reported that overall, they liked being a
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11 FIFO worker. Partners reported that their partners mostly worked day shifts (62%), with some
12
13 working a mixture of day and night shifts (35%), and one person working nightshifts. Partners
14
15 reported their FIFO worker partners to work between 6 and 60 workdays on-shift ($M = 20, SD$
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17 $= 12$), with between 5 and 21 days off-shift ($M = 8, SD = 4$). More than half (64%) of FIFO
18
19 partners reported that overall they did not like that their partner was a FIFO worker. On
20
21 average, participants' household income was AUD\$182,481 (US: ~\$143000; $SD =$
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23 AUD\$56,905 [US \$44700]), with the range between AUD\$52-320,000 (US \$41-250,000).
24
25 Workers' occupations included plant operators, managers, train drivers, heavy machinery
26
27 operators, and specialists.
28
29

30 31 **Thematic analysis**

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33 Three themes were extracted, relating to experiences of negotiating multiple social
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35 roles (theme 1), health and wellbeing issues surrounding FIFO employment (theme 2), and
36
37 social support needs (theme 3).
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39
40 **Theme I: "I'm leading two lives" – Managing multiple roles.** FIFO workers
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42 typically conceived of their work and home lives as two discrete 'worlds', characterised by
43
44 different lifestyles, roles and responsibilities ("*I'm leading two personalities and two lives*";
45
46 participant 13 [P13], worker, male [M], 38 years old [38y]). Commonly described through a
47
48 contrast with the domestic 'world,' the FIFO 'world' was seen to be more rigidly structured,
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50 but allowing greater personal freedom, due to provision of assistance for everyday domestic
51
52 activities and the absence of immediate family commitments ("*I don't have to worry about*
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3 *cooking, cleaning etc.,*” P11, worker, M, 34y). The demands of these two ‘worlds’
4
5 necessitated the adoption of different social roles and patterns of behavior:
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9 *At work I have enormous pressure to deal with so [I am] more aggressive and*
10
11 *business-oriented. I need to maintain a bravado in a male-dominated industry. At*
12
13 *home I have to be happy, supportive, caring, friendly and show empathy* (P13, worker,
14
15 M, 38y).
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20 *While away I can just be a bloke. [When I’m at] home I’m a family man* (P22, worker,
21
22 M, 47y).
23
24

25
26 Workers’ partners also described two ‘worlds,’ with the enhanced burden of domestic duties
27
28 and responsibilities imposed when workers are away requiring greater self-sufficiency
29
30 (“*[she’s] almost [a] pseudo single-parent, in certain circumstances,*” P26, worker, M, 52y).
31
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35 *My wife [says] “when he is away, I have to be strong and independent, service the*
36
37 *car, change the light bulbs, but when he comes home I am weak, defenceless and*
38
39 *dependent.”* (P32, worker, M, did not report age)
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44 Several workers experienced difficulties in negotiating the transition between their two
45
46 ‘worlds’ when returning home from a shift, struggling to adjust to differences in the pace and
47
48 requirements of domestic life:
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52 *The first few days [back home involve] trying to get up to speed with day to day life,*
53
54 *and a different routine.* (P19, worker, M, 42y)
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5 *It is sometimes difficult to readjust and function as an adult at home. By the time you*
6
7 *have adjusted, it is time to fly out again.* (P5, worker, M, 28y)
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9

10
11 Similarly, some partners struggled to adjust their settled domestic routines to incorporate
12
13 workers' return home, which was a potential source of tension:
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17
18 *When my partner comes home he feels like an outsider, as the kids and myself are in a*
19
20 *routine that differs from him. He tries to change things into his way of doing, which*
21
22 *creates havoc in the household.* (P50, partner, female [F], 43y)
23
24
25

26 Participants described a process of renegotiating domestic roles and responsibilities upon
27
28 workers' return, with some partners expressing frustration at FIFO workers for not assuming
29
30 greater domestic responsibility:
31
32

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34
35 *I work 3-5 days a week [and] I get mad at [him] sometimes as he is home and not*
36
37 *helping with household duties.* (P43, partner, F, 36y)
38
39
40

41 **Theme II: “The FIFO roster was the breaking point” – Impact on mental health and**
42
43 **wellbeing.** For most workers and partners, financial gain was the primary benefit of FIFO
44
45 employment (“*I am only working this lifestyle to get ahead financially,*” P1, worker, M, 23y).
46
47 Income was a source of stress for some however, as they felt they had limited autonomy over
48
49 their employment and career, having become ‘trapped’ into undesirable working patterns by
50
51 becoming accustomed to high income (“*I am locked into this lifestyle now,*” P57, partner, F,
52
53 57y):
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3 *The golden handcuffs go on. As people earn more, they spend more, and take on*
4 *larger debt burdens, causing them to be trapped in the mining FIFO work lifestyle.*

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7 (P7, worker, M, 32y)
8
9

10 Indeed, many participants described adverse mental health and wellbeing effects of FIFO
11 employment. For many, absence from family was particularly detrimental. Workers,
12 particularly those with children, often felt that they were missing out on potentially significant
13 family events (*"I have missed out on a lot of living and memories with family,"* P57, worker,
14 M, 57y). Both workers and partners worried about the impact of the prolonged absence of one
15 parent on children's wellbeing and development (*"Will we have regrets later? Are they*
16 *missing out on more than we realise, having their Dad work away?"* P42, partner, F, 34y).
17
18 Workers also voiced concerns about being unable to respond to domestic emergencies while
19 on-shift:
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29
30 *We only have two flights here every week, Monday and Thursday. Once that window*
31 *to escape closes, you are trapped, and constantly hoping that nothing happens back*
32 *home.* (P18, worker, M, 42y)
33
34
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36
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38 Many participants felt that FIFO work put considerable strain on relationships with partners.
39 Many spoke of physical separation leading to a sense of psychological distance, such that they
40 felt *"disconnected"* (P51, partner, F, 44y), or were *"leading separate lives"* (P28, worker, M,
41 58y). Communication between workers and their partners was valued as a means of
42 maintaining relationships, but distance was often felt to reduce the quality of such
43 communication:
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51 *We talk every day, although I sometimes struggle to remain interested sometimes as*
52 *she is not in front of me, merely a voice on the phone. It can be a struggle to bring up*
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2
3 *subjects of conversation, as my day can be quite mundane yet her job as a teacher can*
4
5 *have so many events happen that she wants to tell me about. (P6, worker, M, 29y)*
6

7
8 *[The FIFO lifestyle] adds strain when we are both tired. If we were home we would*
9
10 *say nothing and hug but that's not possible through the telephone so it makes for*
11
12 *awkward phone calls. (P37, partner, F, 27y)*
13

14
15 Physical and psychological distance was reportedly a source of tension for many. Some
16
17 participants reported growing suspicious of their partner's fidelity ("*[I worry that] he'll get*
18
19 *bored and cheat on me,*" P41, partner, F, 33y), and others felt resentful towards their partners,
20
21 for failing to fully acknowledge the perceived sacrifices each makes for the family unit:
22

23
24
25 *Absence doesn't make the heart grow fonder. When things get tough at home, the*
26
27 *resentment can sometimes creep in. (P46, partner, F, 38y)*
28

29
30 *I do resent the fact that he has a week off where he gets to do nothing. I am working*
31
32 *full time and raising our small child, which means I have been unable to attend a*
33
34 *number of training and workshop sessions for my career advancement due to*
35
36 *childcare issues when he is at work. (P47, partner, F, 38y)*
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40 Perhaps consequently, many participants described deterioration or dissolution of
41
42 relationships:
43

44
45 *The FIFO roster was eventually the breaking point of our relationship. It's hard to*
46
47 *expect a partner to be okay with a half time person in a relationship. (P10, worker, F,*
48
49 *34y)*
50

51
52 Many workers described feelings of isolation and loneliness due to prolonged absence from
53
54 their families, which for some, reportedly manifested in anxiety or depression:
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3 *My family feels safe when I'm home, I'm not lonely. I don't [have] anxiety when I'm*
4
5 *home. (P24, worker, M, 55y)*
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8 Partners also described feelings of emotional strain:
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11 *My concerns would be the impact it's had on my mental state of mind at times. Raising*
12
13 *three children on my own hasn't been easy. At times, you feel like you can't go on.*
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15 *(P40, partner, F, 33y)*
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18 The impact of FIFO on partners was an additional concern for many. Several workers
19
20 reported feeling guilty for delegating everyday domestic duties and responsibilities to their
21
22 partners (“*[It] puts stress on my wife. She's effectively a single mum for 2 weeks out of every*
23
24 *three,*” P51, worker, M, 44y), while partners worried about workers' physical and mental
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26 health (“*Is he getting enough sleep, eating correctly, not drinking too much?*”, P43, partner,
27
28 F, 36y).
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32 **Theme III: “Others don't understand how hard it is” – Social support needs.** Workers and
33
34 partners generally felt unsupported in negotiating health and wellbeing problems associated
35
36 with FIFO employment. Many participants felt that people not involved in FIFO work lack
37
38 sympathy and believe that the high income disqualifies any detrimental impacts:
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43 *It's difficult to help others understand how hard it is. [...] There's a perception that it's*
44
45 *the perfect lifestyle so why should FIFO workers complain. (P13, worker, M, 38y)*
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49 Some participants were also unsympathetic to fellow FIFO workers, attributing causality for
50
51 health and wellbeing problems to bad decision-making by workers:
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3 *[FIFO workers] need to think about what the job involves and stop blaming everyone*
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5 *else when things get tough. They weren't made to take the job. [They] need to [stand]*
6
7 *back and look at themselves and reassess their situation. (P8, worker, M, 33y)*
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10
11 Most participants reported receiving most support from their partners (“*we communicate very*
12 *well, we always support and encourage one another when times are tough, and know when to*
13 *give that support,*” P40, partner, F, 33y). However, a mutual lack of shared experience meant
14
15 that many workers felt that partners did not fully appreciate the impact of FIFO working, and
16
17 conversely, many partners felt that workers did not fully appreciate the impact of an increased
18
19 domestic burden:
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26 *Partners need to understand the stress workers are faced with, being away and then*
27
28 *being home. (P27, worker, F, 55y)*
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33 *I have tried talking to my partner about how I feel and he cannot see my problem.*
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35 *(P56, partner, F, 56y)*
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39 Many workers and partners felt that FIFO employers were unsupportive, prioritising
40
41 productivity over workers’ health and wellbeing, and offering only tokenistic support:
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46 *They don't always want to accept the responsibility. They preach all the stuff at*
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48 *inductions [but] when it comes to applying it they turn a blind eye. (P3, worker, M,*
49
50 *26y)*
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3 *Employers spout about mental health, but are not lenient when concessions need to be*
4
5 *made for people with mental health issues. (P43, partner, F, 36y)*
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9 Many workers were reluctant to seek help for health or wellbeing issues. Some reported not
10 always being able to recognise when they required help (*"I had a stage where I was down*
11 *and I didn't even know it,"* P4, worker, M, 27y), as mental health issues were common among
12 workers (*"the struggles they face are what everyone else is feeling too."* P6, worker, M, 29y).
13 Some did not prioritise help-seeking, instead preferring to *"try to tough things out"* (P30,
14 worker, M, 61y). Others reported a 'macho' culture in which help-seeking was viewed as a
15 display of weakness, and felt that seeking help could cost them their job:
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26 *There is still some stigma attached to getting help due to the "manly" side of sucking it*
27 *up and getting on with the job. Those that have issues either keep it to themselves or*
28 *are labelled as not being able to cut it. (P26, worker, M, 52y)*
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35 *There is a bit of concern among workers that this [support] service is tracked by the*
36 *employer who uses it, and this may be a black mark against the person using the*
37 *service. The fear of losing your job because of mental health concerns is still very*
38 *relevant in mining. (P7, worker, M, 32y)*
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46 Workers felt that greater acknowledgement and empathy from management would encourage
47 more help-seeking:
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52 *The stigmas still surrounding mental health issues in mining prevent people accessing*
53 *services on site. If this culture was to improve and promote mental health as a major*
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3 *health and safety topic in the workplace where people are comfortable talking about it*
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5 *openly, this would be the main way to improve support for workers. (P7, worker, M,*
6
7 *32y)*
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11 Other suggestions offered by workers for improved support from employers included
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13 providing dedicated support workers or a ‘buddy system’ for discussing health, greater choice
14
15 of shift patterns, and facilitating close communication with family:
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20 *Adequate communication infrastructure should be available to the people on site so*
21
22 *that partners can contact them at any time and vice versa. (P26, worker, M, 52y)*
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26 *Site visits [for family members] need to be more readily available. It would help the*
27
28 *families at home to see what their loved one goes away to. (P12, worker, F, 37y)*
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33 Several partners reported gaining social support through membership of specialist online
34
35 social networks (“*Facebook has FIFO-wife pages, which offer great support and advice,*”
36
37 P50, partner, F, 43y). Connecting with others with similar experiences was felt to validate
38
39 partners’ concerns (“*it just gives you relief, knowing you’re not the only one having a crappy*
40
41 *night or day,*” P41, partner, F, 33y). Two partners, however, felt that online support networks
42
43 should be administered and moderated by employers, having faced hostility from others in an
44
45 informal FIFO social network (“*I asked for some support ... [and] I was brutally attacked by*
46
47 *other members. I quickly deleted myself from the group,*” P59, partner, F, 58y).
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50 Discussion

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52 Enhancing positive mental health and wellbeing in the workplace is recognized by the
53
54 WHO as a global research priority [25]. This study explored reflections among FIFO workers
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3 and their partners on the mental health and wellbeing impact of FIFO work and strategies for
4 mitigating these concerns. FIFO work is characterized by prolonged periods of working long
5 daily hours away from home [2]. Workers commonly reported difficulty in adjusting between
6 their on- and off-shift roles and responsibilities. Both workers and partners spoke of the
7 development of psychological distance between workers and their partners and the strain this
8 placed on relationships. Feelings of isolation and loneliness were prevalent, along with
9 concerns of how FIFO work impacted communication between workers and their partners.
10 Workers and partners alike typically felt unsupported. There was scepticism of, and
11 reluctance to access, support provided by FIFO organizations, as well as a general feeling that
12 the general public is unsympathetic towards FIFO workers and families. Strategies deemed
13 useful for mitigating problems associated with FIFO work patterns included maintaining
14 effective communication with partners, and receiving emotional and practical support from
15 family members, neighbours, and other FIFO families. These findings provide a unique
16 insight into the methods used by workers and partners to navigate the adverse impacts of
17 FIFO and point to areas in which additional support may be needed.

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Several aspects of the FIFO lifestyle were seen by our participants as potential threats
to mental health or wellbeing. Some workers reported feeling ‘trapped’, such that they were
unhappy in FIFO work but felt unable to take lower-paying alternative employment, having
grown accustomed to the high income levels provided by FIFO. The implicit trade-off
between financial constraints and job satisfaction is likely to compromise worker wellbeing.
These findings are in line with previous FIFO work research findings that job satisfaction and
perceived autonomy over career decisions are important determinants of workplace wellbeing
[26,27]. Participants did not report the methods that they use to seek to overcome feelings of
psychological entrapment. Nonetheless, theory proposes that people are likely to feel more
intrinsically motivated in work that provides feelings of autonomy, competence, and

1
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3 relatedness. Thus, we recommend that FIFO organizations seek to reduce these feelings of
4
5 externally-regulated impositions through simple changes in the work climate to enhance
6
7 feelings of self-determination, competence and a meaningful social connection to others
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9 arising from FIFO work [28].
10

11
12 Workers also reported difficulty in balancing the demands of FIFO working patterns
13
14 with domestic commitments. Many reported being unable to achieve a work-life balance. This
15
16 is often seen by workers to be the main disadvantage of FIFO work [11,12,26]. Our
17
18 participants commonly conceived of 'work' and 'life' as 'separate worlds', characterised by
19
20 different social roles, expectations, and patterns of behavior. While the perceptual 'work'-
21
22 'life' distinction is not specific to FIFO [e.g., 29], work-life transitional issues may perhaps be
23
24 more pronounced, or have greater impact, among those working long hours or for prolonged
25
26 periods away from home [30]. Partners also described challenges in adjusting their domestic
27
28 routines according to the presence or absence of FIFO workers. Both workers and partners
29
30 spoke of periods of disruption as they struggled to adjust to changes in established routines.
31
32 Participants did not report how they overcame these challenges. Training in maintaining a
33
34 comfortable work-life balance, and negotiating work-life transitions, may perhaps be useful
35
36 for FIFO workers and their partners [31].
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40 For many participants, geographical distance, and the regular and prolonged absence
41
42 of FIFO workers led to psychological detachment of workers from their families. Similar
43
44 experiences have been documented among other long-distance commuters, such as long-haul
45
46 truckers and commercial fishermen [18,32]. This is likely to have multiple adverse effects on
47
48 wellbeing. Many participants felt isolated and lonely, a common experience among FIFO
49
50 workers [33]. Workers may also miss out on shared social experiences and feelings of
51
52 companionship, which have been shown to buffer against the adverse impact of everyday life
53
54 stressors [34]. Modern advances in communication (e.g., video calls, social media) may help
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3 reduce, but not fully alleviate, some of the concerns of geographical distance for FIFO
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5 workers and their partners [18]. FIFO organizations might alleviate these feelings of
6
7 loneliness and enhance social support for mental health by providing workers access to
8
9 structured opportunities for social contact (e.g., community-based recreation groups).
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11
12 Psychological distance also reportedly adversely affected the quality of relationships
13
14 between workers and their partners, potentially leading to tension and distrust. Some
15
16 participants were able to mitigate these impacts by maintaining close communication with
17
18 partners. Indeed, effective communication is a characteristic of cohesive and well-functioning
19
20 families [21]. Yet, some workers felt unable to effectively communicate with their partners,
21
22 citing either a lack of shared experiences to discuss, or a lack of adequate on-site
23
24 communication infrastructure. FIFO organizations should acknowledge the importance of
25
26 regular communication for maintaining relationships by prioritizing the provision of access to
27
28 timely and private contact between on-shift workers and their families. Alternatively, as some
29
30 participants suggested, organizations might allow families to visit FIFO sites. While costly to
31
32 administer, research suggests that on-site ‘family days’ provide partners with insight into
33
34 workers’ roles and responsibilities, such that they are better able to understand and empathize
35
36 with workers’ experiences and concerns [35]. Workers, too, report that such initiatives make
37
38 them feel valued and supported by employers [35].
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42 Many participants felt that they lacked social support, which made it difficult to
43
44 negotiate the challenges posed by FIFO work. Previous research attests to the importance of
45
46 social support for maintaining mental health, especially in situations of high stress [36,37].
47
48 Our participants perceived the public to be unsympathetic to FIFO workers and their families,
49
50 and indeed, previous research has highlighted negative media portrayals of FIFO workers as
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52 greedy and undeserving [38]. While participants acknowledged that support was available,
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54 many were reluctant to access it, citing stigma around seeking support for mental health.
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3 While stigma surrounding mental health and help-seeking is well-documented [39], this may
4 be especially pronounced in the typically male-oriented FIFO domain [4], as norms of
5 masculinity may further inhibit help-seeking for mental health [40]. Some partners reported
6 having obtained support using online social networks. Previous research has shown the
7 benefits of online support: while online forums should not be seen as a substitute for
8 professional mental health services, 75% of users of one Norwegian forum found it easier to
9 obtain support from an online forum than to discuss mental health problems in person [41].
10 User anonymity afforded by online forums can disinhibit help-seeking [42]. Conversely,
11 however, anonymity can also facilitate antisocial behavior; two partners in our sample
12 reported receiving abuse from members of an online forum. FIFO organisations should
13 consider funding professionally-moderated online support networks for FIFO workers and
14 their families, to minimise such problems. Professional involvement can also minimise the
15 possibility that users become dependent on the support of other forum members, and
16 withdraw from in-person contact [42]. Furthermore, the administration of social support
17 networks by FIFO organisations, or professionals allied to FIFO organisations, would allow
18 for the integration of structured activities conducive to mental health given the issues raised
19 by FIFO workers. This is important, because participation in shared activities fosters a sense
20 of control, belonging, self-esteem, and social support. These in turn can buffer against mental
21 health problems, just as strongly as can the sharing of thoughts and feelings with others [37].

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44 Many workers did not feel supported by employers and were sceptical of the motives
45 of FIFO organisations, viewing them as ultimately unsympathetic to the mental health and
46 wellbeing needs of workers. Available support was viewed as tokenistic, and most workers
47 felt that their jobs would be under threat if they attempted to access support. This is
48 problematic, as organisational support (both actual and perceived) is central for achieving
49 health and wellbeing in the workplace [e.g., 43]. Cynicism towards workplace health policy
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3 can arise from perceptions of senior management as lacking integrity, competence, or
4 trustworthiness. Cynicism may be overcome by adopting a more participatory approach to the
5 development and implementation of mental health support [44]. Employee involvement in
6 workplace health policy development would allow for integration of workers' experience and
7 knowledge, and may build trust between management and employees, so achieving greater
8 acceptance among the FIFO workforce.

15 **Limitations and Future Directions**

16
17
18 Limitations of our study must be acknowledged. We collected data via questions
19 probing domains that we deemed to be important to FIFO workers and their partners. These
20 questions may have neglected other relevant areas of the FIFO experience relevant to health
21 and wellbeing. Additionally, our survey design, whereby qualitative data were collected via
22 online free-text responses, did not allow us to probe further into participants' responses.
23
24 While our participants cited various adverse impacts of FIFO work on their health and
25 wellbeing, we cannot identify the mechanisms underlying such impact. It is plausible, for
26 example, that FIFO poses risks to mental health and wellbeing only among workers with low
27 job satisfaction or perceived autonomy [22]. Additionally, while we sought to document
28 participants' coping strategies, in some instances – for example, where describing feelings of
29 psychological entrapment – no such strategies were cited. Semi-structured interviews, in
30 which participants can be asked to expand upon their responses, may have produced a deeper
31 insight into the issues we documented and future such research will be important for
32 elaborating on these study findings. Furthermore, our sample size was relatively small, and
33 the generalisability of findings is unclear. There are likely unique mental health and wellbeing
34 concerns for FIFO workers in different regions, roster lengths, and occupations [17]. Our data
35 may have been influenced by selection bias, such that those who were most motivated to
36 respond to our survey were those with the most negative experiences. While the veracity of
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3 our analysis was confirmed by a subsample of our participants, it is unclear whether the views
4 documented among our sample are representative of FIFO workers, or their partners, more
5 broadly. However, our aim was not to generate generalisable findings, but rather to document
6 health and wellbeing experiences pertinent to FIFO workers and their partners. Indeed, ours is
7 the first study to our knowledge to have explored the impact of FIFO on partners. Our
8 findings highlight the need for the provision of support to both workers and their partners.

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16 This study highlighted the mental health and wellbeing concerns raised by FIFO
17 workers and their partners, and the strategies they used to address these concerns, while
18 pointing to areas in which further support may be needed. FIFO organizations may need to
19 acknowledge, in a manner more visible and transparent to employees, the importance of
20 worker health and wellbeing, and offer unconditional support to address their concerns. While
21 many felt unsupported, some workers and their partners were able to mitigate the potential
22 adverse impact of FIFO by maintaining close communication with partners, and securing
23 emotional and practical support from others. FIFO organizations, and their employees, may
24 benefit from implementing workplace health and wellbeing programs co-designed by
25 management and employees, to address these concerns.
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Author Contributions

KLA, CV, and AR helped conceive of the idea of the study design, collected the data, and provided intellectual content for the manuscript. BG conducted the data analysis, assisted in interpreting the findings, and provided intellectual content for the manuscript. All authors were involved in drafting the manuscript and revising it critically for important intellectual content and gave approval of the final version to be published.

Data Sharing Statement

Extra data is available by emailing the corresponding author (ALR).

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Supplemental File – Open response survey

1. Are you concerned about how the FIFO lifestyle affects you?
2. What concerns you the most about the FIFO lifestyle?
3. Are you concerned about how the FIFO lifestyle affects your partner?
4. Is there anything in particular that worries you about FIFO and your relationship?
5. Do you feel there is adequate support for those experiencing difficulties due to the FIFO lifestyle?
6. Do you think people seek the help they need?
7. What barriers do you think holds them back from seeking the support?
8. Do you have suggestions on how support for FIFO workers and FIFO partners could be made better?

COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
<i>Personal characteristics</i>			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	
Occupation	3	What was their occupation at the time of the study?	
Gender	4	Was the researcher male or female?	
Experience and training	5	What experience or training did the researcher have?	
<i>Relationship with participants</i>			
Relationship established	6	Was a relationship established prior to study commencement?	
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	
Interviewer characteristics	8	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	
Domain 2: Study design			
<i>Theoretical framework</i>			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	
<i>Participant selection</i>			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	
<i>Setting</i>			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	
<i>Data collection</i>			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	
Repeat interviews	18	Were repeat interviews carried out? If yes, how many?	
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the interview or focus group?	
Duration	21	What was the duration of the interviews or focus group?	
Data saturation	22	Was data saturation discussed?	
Transcripts returned	23	Were transcripts returned to participants for comment and/or	

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
<i>Data analysis</i>			
Number of data coders	24	How many data coders coded the data?	
Description of the coding tree	25	Did authors provide a description of the coding tree?	
Derivation of themes	26	Were themes identified in advance or derived from the data?	
Software	27	What software, if applicable, was used to manage the data?	
Participant checking	28	Did participants provide feedback on the findings?	
<i>Reporting</i>			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	
Data and findings consistent	30	Was there consistency between the data presented and the findings?	
Clarity of major themes	31	Were major themes clearly presented in the findings?	
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.