Do rail workers still have a 'feast-and-famine' sleep pattern post-Covid?

Anna Vereker, Barbro Årnes & Claire Watt-Coombes

RSSB

SUMMARY

This paper presents key findings from the Rail Safety and Standards Board (RSSB) 2023 UK rail industry fatigue survey. A similar survey was run in 2018 and found that rail workers (especially shift workers) generally had a 'feast-and-famine' sleep pattern. We are now able to compare 2018 results with those from the 2023 survey to ascertain if this pattern still exists and to consider how features of fatigue risk management may have changed for rail workers in the post-covid period.

KEYWORDS

Fatigue risk management, Sleep, Shift work, Railway

Background and aim

In 2018 the RSSB facilitated a UK rail industry fatigue survey providing the first pan-industry insights into features of rail workers' fatigue risk management. Key among these findings was that many rail workers (especially shift workers) reported a 'feast-and-famine' sleeping pattern which meant they were unlikely to be obtaining the quantity of sleep they needed (Basacik & Tailor, 2022). By 2023 rail industry companies were keen to repeat the survey to consider what elements of fatigue risk may have changed in the intervening five years, and particularly in the post-Covid period.

The 2023 fatigue survey provided an opportunity to 'take the pulse' of the industry's fatigue risk management success from a rail workers' perspective. This will help to inform the work of UK rail industry fatigue groups, the overall RSSB fatigue programme, and the wider Rail Health and Safety Strategy (RHSS) (RSSB, 2024).

Method

The original 2018 survey was reviewed and refined, with some further individual fatigue management questions added, and overall survey length reduced to under 20 minutes completion time. The questionnaire was digitised using the Microsoft Customer Voice[™] application which was available on a variety of electronic devices and accessible via a web link and a quick-response [QR] code. Although a paper version of the questionnaire was available, no companies chose to use this. Participating companies from the previous survey were contacted. The survey was advertised via the industry fatigue groups and on RSSB's social media platforms. In total 4143 survey responses were received, compared with over 7000 in 2018.

Results

Individual company analysis (N=24) and cross-industry analysis has been undertaken. This represented a variety of rail companies from passenger operations, freight operations, infrastructure and logistics, and supply companies.

Headline findings from the 2023 cross-industry analysis include:

- Around two in five rail workers said they had experienced a safety event at work where fatigue or alertness was a factor. This frequency looks to have increased from one in six in the 2018 survey and requires further analysis.
- 47% of respondents indicated that in the past month they have felt so tired at work that they have had to make some effort to stay awake once a week or more. In 2018 this frequency was 34%, and again requires further analysis.
- 72% of respondents admitted that they had driven a road vehicle while fatigued in the past 12 months. In 2018 this was 68%, and we need to investigate whether this is a statistically significant difference.
- 78% of respondents reported achieving less than six hours sleep between two night shifts, only 48% had less than six hours sleep between two day shifts, and 26% had less than six hours sleep between two days off. At first glance this suggests that the 'feast-and-famine' pattern of sleep continues for rail workers and requires further investigation.
- Shift working respondents provided a range of details about their most fatiguing shift in the past month including a self-rating on the Karolinska Sleepiness Scale (KSS), (Åkerstedt & Gillberg, 1990). 52% scored 7-9 (out of 9) on the scale, which is the level at which performance decrement has been shown in various task performance research (Kaida et al, 2006). The KSS is a central component of the Fatigue Risk Index (FRI) which is a fatigue prediction tool commonly used in the rail industry (QinetiQ & Simon Folkard, 2006).

Discussion

The initial cross-industry analysis seems consistent with results found in the 2018 survey, although further statistical analysis is ongoing. The fact that respondents continue to report lack of sleep between shifts (especially night shifts), driving a road vehicle when fatigued and working at potentially dangerous levels of fatigue suggests that rail fatigue risk management requires further development and enhancement. This highlights the importance of the RSSB's collaborative work as part of the Rail Health and Safety Strategy (RHSS), in assisting rail companies with their fatigue risk management activities.

Moreover, while the overall number of survey responses was lower in 2023 than in 2018, there was a broader spread of companies from different areas within the rail industry. This means the data (once fully analysed) can be used to help target, develop and implement fatigue risk management improvements.

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