

THE KEY TO SHIFT-WORKER PRODUCTIVITY



Q: What's the key to shift-worker productivity? A: Understanding their wellbeing

Shift-workers are crucial in many industries, from healthcare to transportation, and therefore the quality of their work can be critical to your bottom-line. Caring a little about their wellbeing can go a long way.

It's an established fact that wellbeing is directly related to productivity.

A paper from the University of Bradford, appropriately titled 'Wellbeing and Productivity' (WAB), comprehensively reviewed the literature and reported that not only are poor mental health and chronic health conditions linked with lower productivity, the opposite is also true. People who report high levels of wellbeing demonstrate higher labour productivity.

Indeed, the links show up in paper after paper, even for seemingly mild wellbeing concerns. As documented in WAB, in one study¹ researchers found that those who had less than

five hours of sleep "reported 6.93% greater productivity losses due to worse performance when at work."

A different study² that looked at 18,000 US employees discovered that those who slept less – or more – than seven to eight hours a night "experienced significantly more productivity loss".

Because wellbeing can have a direct impact on the bottom line, it makes sense for employers to have knowledge of its drivers so that they can structure employment appropriately. This is particularly true for shift-workers where the nature of their job, such as changing hours or night shifts conditions can have idiosyncratic effects.

Below, we look at what's driving shift-worker wellbeing. We've relied here on a 2016 meta-study³ on the topic 'Characteristics of shift work and its impact on employee performance and wellbeing' (CSWB).

¹ See https://www.rand.org/pubs/research_reports/RR1084.html

² See https://journals.lww.com/joem/abstract/2014/07000/the_association_between_optimal_lifestyle_related.5.aspx

³ See <https://www.sciencedirect.com/science/article/abs/pii/S0020748916000080>

1. Sleep and night shifts

It's not a coincidence that sleep was mentioned above. Whether it's a concierge working the dawn hours at a hotel or an extrusion operator working late at a factory, shift work often requires people to divert from typical sleeping patterns. However, not all nightshifts are created equal. Research from 2014⁴ looked at nurses working twelve-hour shifts for three consecutive nights and found that those who were working fixed shifts reported lower levels of acute fatigue than nurses working rotating shifts.

A different study⁵ discovered that nurses who permanently worked night shifts had the highest likelihood of reporting job dissatisfaction. Also, regardless of night shifts, strong links have been discovered between sleep-deprived nurses and patient care errors, with researchers finding⁶ that increasing sleep by a single hour reduced the predicted chance of occupational errors by a full quarter (25%). While it's important to talk to your own workers about their preferences and how night shifts are affecting them, from the above we can take three cautious lessons.

- Having enough sleep is very important, and anything you can do to encourage better sleeping habits will help your staff and help your business.
- If night shifts are regular and necessary, workers who are permanently assigned to them will likely prove more productive than those who are rotated on and off them.
- Over the long run, workers who are permanently on the night shift may experience high job dissatisfaction. This is worth keeping an eye on in order to mitigate retention risk.

2. Shift length

A question many employers might have is whether there is a decline in effectiveness if people work a full 12 hour shift instead of eight hours. There is a lot of evidence to suggest this does happen.

Returning to the CSWB paper, it refers to a study of 104 employees working those different shifts at nuclear power plants. While safety system failures saw no increase, there was a "significant increase in operator error" for those on 12-hour shifts.

In another interesting study⁷ referenced in CSWB, electrical plant workers were given standardised tests to complete after their 8-hour shift. They were then given another test after the introduction of 12-hour shifts. There was a 30% increase in errors made after the change. This jumped to 50% for those who were on night shifts.

There's even more evidence. Studies in healthcare from CSWB found that infection risks increased by three times for those working more than 8 hours and 45 minutes and that nurses working more than 12.5 hours were more likely to report a medication error.

The lesson here is simple. While longer shifts might be required,

⁴ See: <https://pubmed.ncbi.nlm.nih.gov/25199168>

⁵ See: <https://onlinelibrary.wiley.com/doi/10.1111/j.1365-2648.2021.06105.x>

⁶ See: <https://pubmed.ncbi.nlm.nih.gov/24316614/>

⁷ See: <https://pubmed.ncbi.nlm.nih.gov/107097541/>

they also require monitoring. A decrease in worker alertness and cognitive ability could not only have productivity implications, but safety implications.

3. Total weekly working hours, overtime and rest

The evidence that working more than 40 hours in a week is detrimental to wellbeing is not strong compared to other factors. A study⁸ of 11,516 nurses in the US showed that it increased

“the likelihood of observing or experiencing adverse events such as patient falls with injury (17%), nosocomial infections (14%) and medication errors (28%)”.

There is more evidence that overtime has an adverse effect. The same study that looked at US nurses found a link between voluntary paid overtime of over four hours and self-reported errors. An even larger European study⁹ of 31,627 nurses reported that working overtime on a shift resulted in an increased chance of people reporting poor quality of care, poor patient safety, and higher rates of missed care.

As you might expect, there was also a positive correlation between having breaks and higher quality work. Interestingly, truck drivers¹⁰ working 10-hour shifts were less likely to have an accident if they had one or two breaks of 30 minutes or more, but having long off-duty time before taking the trip had no effect.

In manufacturing, a study showed

that having 24 hours off between blocks of day and night shifts resulted in higher alertness and lower fatigue.

From the above we can take a few lessons.

- Working more than 40 hours in a week might not be an issue, but it is something that should be monitored. Staff who are doing so should be consulted regarding their levels of fatigue.
- A moderate amount of overtime in a week (four hours), even voluntary overtime, can result in poorer worker productivity.
- Long shifts really do benefit from solid breaks, and workers going from day to night shifts or vice versa should be given a day off in between that change.

4. Shift-work's effects on personal life

There is less quantitative evidence for what shiftwork does to people's overall wellbeing and their personal lives¹¹, but we do have more personalised evidence. Here we draw on a 2018 study, 'A qualitative exploration of the shift work experience: the perceived effect on eating habits, lifestyle behaviours and psychosocial wellbeing'.

Conducting 15 focus groups with over 100 participants total, the researchers found three themes which can all have an impact on wellbeing.

- Eating habits were said to worsen, according to the workers. In fact, the study found this was perhaps

⁸ See: <https://pubmed.ncbi.nlm.nih.gov/107097541/>

⁹ See: <https://pubmed.ncbi.nlm.nih.gov/25226543/>

¹⁰ See: <https://www.sciencedirect.com/science/article/pii/S0022437514000942>

¹¹ See: <https://academic.oup.com/jpubhealth/article/40/4/e482/4931231>

the most common wellbeing issue. Workers reported having less time and energy to shop and cook for themselves and so they resorted to the most convenient food such as takeaway food and processed snacks. At the same time, they began to consume much larger levels of coffee to stay alert. One factor here that employers can have more control over is making healthier food more easily available around shifts.

- Sleeping, drinking, smoking and exercise habits were all negatively impacted by shift work. Sleep is well-covered above. Smoking increased for a few because it was a way to suppress their appetite for unhealthy food and/or a way to create more breaks from work. Exercise decreased due to lower levels of time and energy. Drinking had uneven effects, with some reporting they drank less because they couldn't afford the fatigue/hangover effects, while others reported drinking more in order to get to sleep or because the culture of shift work encouraged it.
- Psychosocial habits being affected by shiftwork is perhaps the most interesting finding. Many workers reported an inability to synchronise their work with the lives of their friends and family, which resulted in greater feelings of isolation. On the other hand, some workers reported the exact opposite – that shift work was a boon for increasing time with their family.

Healthier... and wealthier

All of the above relies on large studies of multiple industries, they cannot tell you which issues are most likely to affect the wellbeing and productivity of your workers. Taking this seriously can provide real, measurable dividends, so it is worth investing in an internal program to first understand your workforce's wellbeing and then intervene when and where you can.

At Healthy Business, we can help with that. We offer finely designed wellbeing solutions around a number of relevant topics, from sleep health and eating better to mental health courses and injury prevention and management. We also have an individual coaching program that can scale to the size of your workforce and employees' situations (such as remote locations, different hours, personal factors).

But our most valuable offering might be the help we provide as consultants. We will collaborate with your organisation and work together to understand your wellbeing needs, and co-design a bespoke solution that will set your company on the path to being healthier and wealthier.

Get in touch today.

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