

July 2022

Health and wellbeing  
among Australian  
construction workers:

# Exploring the Systemic Causes

Part 2 of 3

## Introduction

The first summary report in this series outlined the evidence showing that characteristics of work and jobs in construction affect the short and long term mental and physical health of the workforce. In this report we describe the research examining the reasons why construction workers experience harmful job characteristics that can negatively affect their mental and physical health.

## Ecological approach to understanding workers' health

Health researchers have called for an ecological perspective to be used:

- in understanding the factors contributing to health, and
- in developing health promotion programs.

An ecological perspective looks beyond individuals' health-related behaviours, to focus on the environmental factors that shape health behaviours and/or outcomes.

Proponents of an ecological perspective identify that some environmental conditions have a disproportionately high level of influence on individuals' health and wellbeing. This means that health promotion programs should target the most effective leverage points within the systems in which people live and work.

Consistent with this approach, Australian research has identified factors that affect workers' health and wellbeing in the context of the project workplace and the broader construction industry environment (Figure 1).

## The project work environment

In the previous summary report, we highlighted how long work hours and interference between work and non-work life are linked to burnout in the construction workforce.

Long hours and work-life imbalance have also been linked to chronic disease risk factors including poor diet, high cholesterol, a lack of physical exercise and low physical stamina, a high body mass index and harmful levels of alcohol consumption.

In the Australian construction industry, long work hours act as a significant barrier to the adoption of healthy lifestyle behaviours,<sup>1</sup> even when construction organisations implement programs to encourage positive health behaviour.

For example, a construction organisation operating in Queensland implemented a health promotion program focused on encouraging workers to quit smoking, maintain a healthy diet and engage in exercise and physical activity outside of work.

A statistical evaluation of the program revealed that workers at participating worksites did not significantly change their behaviour in relation to these risk factors or activities. In-depth interviews with workers explored why this was the case. The interviews revealed that long and inflexible hours of work made it difficult for them to change their health-related behaviours with regard to nutrition and exercise, while drinking alcohol and smoking were identified as ways that the workers relieved work-related stress.<sup>2</sup>

*Time is the biggest barrier. If you don't have the time, you don't have the time. If you want to do something extra in your day, you will be doing it before you go to work in the dark. By the time you get home, you are exhausted and just want to sit down, you don't want to do anything.*

– onsite construction worker

Workers at the Queensland case study construction projects described how a shortage of time necessitated trade-offs that negatively affect their ability to engage in healthy activities, get sufficient rest, participate in family activities and even attend to their own personal healthcare needs<sup>3</sup>.

These findings reflect that the health benefits associated with individually-focused behaviour change programs are likely to be relatively weak and short-lived where programs are introduced into project environments that are not supportive of healthy behaviour in other ways.

In particular, time poverty and an imbalance between work and non-work life can act as significant impediments to the adoption of healthy lifestyle behaviours and undermine the benefits realised by behaviour-focused health promotion programs in the construction industry.

*It is a time thing, some guys go to the gym at 3.30 am in the morning. That is what you have to do in this industry, something has to be sacrificed. Sleep time gets traded. You end up brain dead. We used to have sacred Saturday – do an 8 hour day and have Mondays off and then come back to work on a Tuesday. That allowed you to get your jobs done – like going to the doctor or having lunch with your wife but that got traded and you don't do those things now. If you don't get everything done, it is a sense of under achieving.*

– onsite construction worker

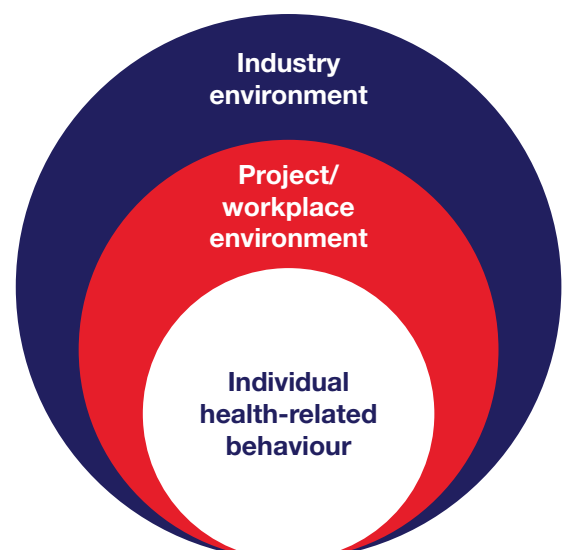


Figure 1: Ecological model of factors affecting construction workers' health and wellbeing

## The construction procurement environment

It is helpful to understand the way that the work environment at the project level is shaped by broader environmental factors at play within the construction industry.

Semi-structured interviews conducted with construction industry leaders representing construction contracting and public sector client organisations identified the procurement environment and competitive tendering processes as contributing factors to a variety of stressful work conditions experienced in project delivery, including the need to work long hours.

In particular, the pressure to commit to tight - possibly unrealistic - deadlines, combined with substantial financial penalties for time over-runs were identified as creating conditions within which workers are placed under extreme pressure and long hours are inevitable.<sup>4</sup>

*...procurement creates a dynamic where people overcommit, but when it comes to doing the delivery it can cause pressure points that invariably end up with a personal and human impact that either when it's very long hours and lots of stress...and then the financial penalties that sit with that drive certain behaviours.*

– construction company CEO

Australian research has identified job insecurity as a risk factor for mental ill-health for construction workers.<sup>5</sup> Job insecurity is related to the uncertainties associated with the need to win work in a competitive procurement system. In the context of multiple layers of subcontracting, principal contractors described how the industry's competitive structures and allocation of risk in contracts (including in relation to time performance) create substantial pressure that is pushed down the supply chain to subcontractors. This puts subcontractors and their workers under considerable pressure and can even be a threat to business survival for these companies (who are often small to medium sized enterprises).

*...if you're a subcontractor, it's very up and down. So you're only as good as the job you're on and after that job's finished, there's no guarantee of the next one. So there's an anxiety that comes with that job insecurity*

– construction company senior manager

## Fluctuating demands and pressure points in project work

There are some characteristics of project-based work that make it different to work in continuous 'steady-state' industries. For example, time pressures experienced by construction workers fluctuate over the life of a project. That is, workers can experience periods of peak intensity at various points in the project timeline. For the most part, these are not followed by opportunities to rest and recover from this peak activity.

Using a weekly 'log' to collect data from project-based workers in a large infrastructure project, we found that critical milestone points in project delivery were associated with a rapid escalation in work hours and time-pressure, which was accompanied by a corresponding deterioration in life balance and wellbeing (Figure 2).

During these periods of high intensity work, the project workers were not able to experience sufficient recovery between work shifts<sup>6</sup>. If allowed to continue unchecked, these work patterns ultimately produce dangerous levels of fatigue among project-based workers.

Workers will also fall into a spiral in which insufficient recovery and increased fatigue require higher expenditure of effort to achieve the required quantity of work, resulting in depletion of resources, exhaustion and ill-health.



Figure 2: Fluctuation in work hours and wellbeing indicators in a major infrastructure construction project<sup>6</sup>

*[I worked a] 10 hour night shift on Thursday after a 8.5 hr day shift with only 2 hours of light sleep in-between. Back at work for Friday day shift and start of night shift (until approximately 9pm). There were lots of essential works to complete this week for [the project milestone] on Saturday. I will also be on night shift tomorrow. Feeling overall very tired and have little energy.*

– site office construction worker

## The link between mental health and bodily pain

Work in the construction industry is also different to other industries in that manual/non-managerial construction workers also have physically demanding jobs. Research in the Australian construction industry used a whole-body system of wearable sensors to examine the risk associated with undertaking commonly performed activities in rail construction work. This work identified rail construction workers as a high-risk group for work-related musculoskeletal injury and recommended that systems of work, new technologies and ergonomically designed equipment should all be considered as ways to reduce these risks.<sup>7</sup>

A large proportion of construction workers experience musculoskeletal injury or body pain associated with their work. Research undertaken in the construction industry of Victoria revealed that construction workers begin to experience body pain and injury originating from work tasks when they are relatively young.<sup>8</sup>

The study found that:

- 17.6% of participants aged 20-29 years experienced lower back pain and joint pain in the fingers, shoulders, hips, knees, and/or ankles daily,
- 13.3% of participants aged 30-39 years experienced lower back pain daily, and
- 16.7% of participants aged 30-39 years experienced daily joint pain in the fingers, shoulders, hips, knees, and/or ankles.

In many cases, manual/non-managerial construction workers accept bodily pain as an inevitable consequence of their work. These workers feel considerable pressure to stay fit and work through their pain and injury, and can feel trapped in jobs that cause pain and distress because they perceive that they have no alternative employment pathways.

Construction workers whose pain originates from work tasks also report a higher severity of depression, anxiety, and stress, highlighting the link between injury, bodily pain and mental ill-health.

The link between bodily pain and mental ill-health highlights the importance of developing holistic programs to address construction workers' health and wellbeing. These programs need to look beyond individual behaviours and consider ways to reduce the risk of both physical and mental harm and improve the quality of work experienced by workers in the construction industry.

*My father actually did this [roof plumber] for 47 years. And he's nearly 70 now and he can hardly walk. He can't use his hands anymore. What else can't he do? He gets gout bad and he's got arthritis in his fingers. So, that's what I've got to look forward to.*

– roof plumber

## The link between industry norms and mental health stigma

The construction industry is heavily influenced by the prevalent macho work culture in which workers are expected to be tough and strong, not be afraid of danger, and not show weakness<sup>9</sup>. In the study (referenced above) examining bodily pain and mental health, construction workers raised the prevalence of mental ill-health and the stigma associated with help-seeking<sup>10</sup>. The stigma was largely associated with the potential consequences of showing weakness in a workplace culture where weakness is not accepted. The masculine culture of the construction industry therefore appears to perpetuate the stigma associated with mental ill-health contributing to workers' hesitancy to seek help for mental health issues.

*It's a very male dominated – we're all covered in tattoos and we're just blokes and I think, if a conversation – if it took place, that person would, it'd be awkward.*

– floor layer

*Mental health, I would have to say it's going to be one of the biggest issues that is going to come up and is an issue now, in the industry. I think it's a huge problem. I think the amount of people that are not going to get help is going to be huge.*

– technician

## Conclusions

Adverse impacts on construction workers' health and wellbeing are often attributed to the project-based nature of the industry. Certain characteristics associated with project work have been identified as adversely affecting construction workers' health and wellbeing. The research also suggests that more needs to be done to address the underlying (or latent) factors contributing to low levels of health and wellbeing in the Australian construction workforce.

In particular, some of the construction industry's long-standing ways of working could be re-thought to minimise these negative health impacts. But it is important to also recognise that the adverse conditions of work experienced by project-based workers in the construction industry are driven by the behaviours, structures and processes through which projects are procured and work is scheduled, resourced and delivered.

There is growing interest in providing a work environment in construction projects in which:

- (i) risks to physical and mental health are identified and effectively controlled, and
- (ii) a work environment that positively promotes health and wellbeing is fostered.

The ecological perspective on workers' health and wellbeing highlights the importance of addressing elements of project and industry environments as critical contextual factors that shape workers' health and wellbeing. Indeed, the research highlights that focusing on health behaviour alone will be insufficient to produce meaningful or long-lasting change.

<sup>1</sup>Turner, M., & Mariani, A. (2016). Managing the work-family interface: experience of construction project managers. *International Journal of Managing Projects in Business*, 9(2), 243-258.

<sup>2</sup>Lingard, H., & Turner, M. (2015). Improving the health of male, blue collar construction workers: a social ecological perspective. *Construction Management and Economics*, 33(1), 18-34.

<sup>3</sup>Lingard, H., & Turner, M. (2017). Promoting construction workers' health: a multi-level system perspective. *Construction Management and Economics*, 35(5), 239-253.

<sup>4</sup>Lingard, H. & Harley, J. (2020), *Mental Health in the Construction Industry*, [https://www.pc.gov.au/\\_\\_data/assets/pdf\\_file/0009/251001/sub827-mental-health.pdf](https://www.pc.gov.au/__data/assets/pdf_file/0009/251001/sub827-mental-health.pdf)

<sup>5</sup>Turner, M., & Lingard, H. (2016). Improving workers' health in project-based work: job security considerations. *International Journal of Managing Projects in Business*, 9(3), 606-623.

<sup>6</sup>Lingard, H. C., Francis, V., & Turner, M. (2010). The rhythms of project life: a longitudinal analysis of work hours and work-life experiences in construction. *Construction Management and Economics*, 28(10), 1085-1098.

<sup>7</sup>Lingard, H., Bird, S., Lythgo, N., selva-Raj, I. & Troynikov, O. (2017), *Musculoskeletal Risk in the Rail Construction Sector*, RMIT University, Melbourne.

<sup>8</sup>Turner, M., & Lingard, H. (2020). Examining the interaction between bodily pain and mental health of construction workers. *Construction Management and Economics*, 38(11), 1009-1023.

<sup>9</sup>Lingard, H., & Turner, M. (2019). Construction Workers' Health. In H. Lingard & R. Wakefield (Eds), *Integrating Work Health and Safety into Construction Project Management*, John Wiley & Sons Ltd: Hoboken, NJ, 73-103.

<sup>10</sup>Turner, M., & Lingard, H. (2020). Examining the interaction between bodily pain and mental health of construction workers. *Construction Management and Economics*, 38(11), 1009-1023.

### Helen Lingard

Distinguished Professor

[helen.lingard@rmit.edu.au](mailto:helen.lingard@rmit.edu.au)

### Michelle Turner

Associate Professor

[michelle.turner@rmit.edu.au](mailto:michelle.turner@rmit.edu.au)

