

Coronavirus in Victorian Healthcare and Aged Care Workers (COVIC-HA) Study



Final Report –
Findings and Recommendations
April 2023

FOREWORD

The COVID-19 pandemic has significantly impacted all Victorians, given the prolonged lockdowns that have been required. Since the start of the pandemic, individuals working in health care and aged care have shouldered a large burden, making it crucial to monitor and support their health and wellbeing.

The COVIC-HA Study set out to investigate the impact of the COVID-19 pandemic on healthcare workers and workplace culture in Victoria, Australia, at a time when there was limited data on the subject. The study commenced in March 2021 and enrolled more than 1000 Victorian health care workers (HCWs) across hospital, ambulance, aged care and primary care settings over the twelve-month study period. Survey data was collected over time to monitor mental health changes, impacts on physical health, and workplace responses to support HCWs. Workplace preparedness and responses were also investigated in order to identify strategies that mitigate adverse outcomes.

Over the course of a year, we examined the mental health and wellbeing of healthcare workers, and how their perceptions of their workplaces changed over time. Our research revealed that burnout and strain were significant issues for workers, and that impacts and needs changed over time. Based on our findings, we formulated a series of recommendations to improve and support workers' mental health and wellbeing during the pandemic and beyond.

The COVIC-HA Study draws upon the diverse expertise across Monash University's School of Public Health and Preventive Medicine and complementary experience from trusted research collaborators from Ambulance Victoria, Alfred and Monash Health and other areas within Monash University. The Investigator Team and Advisory Committee comprise of experts in infectious diseases, mental health, biostatistics, epidemiological modelling, implementation science, occupational medicine and health economics. They also have experience and access to networks across trauma, intensive care, rehabilitation, primary care, allied health, aged care and first responders.

The COVIC-HA Study was funded by the Victorian Government COVID-19 Research Fund (Stream B: Cohort studies into the long-term impacts on groups at risk of increased exposure such as health care workers, HHSF/20/12957) and WorkSafe Victoria. The funders had no role in the study design, collection, analysis, or interpretation of the data or preparation and submission of the manuscript.

For any questions or concerns about the COVIC-HA Study, please email covicha@monash.edu.

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EXECUTIVE SUMMARY

- The Coronavirus in Victorian Healthcare and Aged-Care workers (COVIC-HA) Cohort Study established a cohort of Victorian healthcare workers (HCWs) across four healthcare settings; hospital, aged-care, primary care and ambulance, to examine longitudinal impacts of the COVID-19 pandemic on physical and psychosocial wellbeing of HCWs and identify organisation-level support and prevention strategies.
- We used a combination of quantitative and qualitative research methods to study impacts and experiences over time. We collected quantitative data via three online surveys of Victorian healthcare workers in May-July 2021, October-December 2021 and May-June 2022, and qualitative data via two rounds of semi-structured interviews with healthcare workers and senior organisational personnel in May-July 2021 and May-June 2022.
- Between 984 and 1153 Victorian HCW responses were received at each of our three survey timepoints, with 496 participants (50.4%) completing all three surveys.
- In the first survey (mid-2021), we found that paramedics and nurses reported poorer mental health and higher levels of social isolation compared to doctors and allied health staff.
- Longitudinal analysis of data collected between May 2021 to May 2022 identified that mental health and wellbeing outcomes among HCWs have fluctuated, with similar patterns in primary outcomes across all occupational groups. Overall, we found that:
 - The prevalence of burnout and the proportion of the cohort considering leaving their profession increased over time;
 - Scores for wellbeing, resilience and optimism worsened over time; and
 - Depression, anxiety and post-traumatic stress levels peaked in late-2021 but by mid-2022, these levels had returned to that of 12-months prior.
- Findings from the second round of qualitative interviews with HCWs and key informants revealed the evolving impacts of the COVID-19 pandemic on HCWs and healthcare organisations as the pandemic endured. As the initial emergency pandemic response transitioned into a sustained response, HCW and key informants identified challenges around workforce availability, coupled with increased workloads. Future focused solutions that prioritise the needs of the workforce beyond the acute impacts of the pandemic itself were identified.
- Overall, our study findings indicate that during the COVID-19 pandemic, many healthcare workers faced mental health and wellbeing challenges. Findings point towards the need for improved monitoring of HCW health and wellbeing, investment in flexible and meaningful psychological support and wellbeing initiatives for HCWs, evidence-based strategies to strengthen a stretched healthcare workforce, and improved monitoring, prevention and mitigation of the impacts of the COVID-19 pandemic in workplaces and industry.
- A detailed list of evidence-based recommendations arising from this study is included in this report.
- Challenges faced in the course of this research included a lack of pre-pandemic data on Australian HCW mental health and wellbeing to use for baseline comparisons and limited recruitment in aged care and primary care settings likely due to the demands of staff in these settings and workplaces.
- Study outputs include Open Access peer-reviewed papers published in the Medical Journal of Australia (MJA), International Journal of Environmental Research and Public Health (IJERPH) and Frontiers in Public Health; a report to WorkSafe Victoria and Department of Health on the COVID-19 related workers' compensation claims findings, and three further manuscripts are in development.
- With ongoing pandemic demands on health- and aged-care workers, governments and healthcare services must continue to preserve the physical and mental wellbeing of the frontline workforce through evidence-based measures and policies in addition to standardized monitoring of psychosocial outcomes.

ACKNOWLEDGMENTS

The COVIC-HA investigator team wish to thank the Victorian Government COVID-19 Research Fund (Department of Health and former Department of Jobs, Precincts and Regions) and WorkSafe Victoria for their funding support for this project.

The COVIC-HA investigator team also acknowledges all participating institutions and health care workers for their time and contribution to the COVIC-HA project and their efforts in keeping all Victorians safe throughout the COVID-19 pandemic.

1. RECOMMENDATIONS

Following our review of findings from the COVIC-HA Cohort Study and reflecting on our first-hand experiences working in the frontlines during the pandemic, we have generated the following list of recommendations. These recommendations should be read in conjunction with previous publications (1, 2, 3).

Our recommendations largely align with those put forward by the Royal Commission into Victoria's Mental Health System (4) relating to the healthcare workforce, namely:

- Improving the mental health and wellbeing of healthcare and aged care workers as the pandemic response continues in addition to workforce preservation.
- Creating further opportunities for the sector to make distinct and significant contributions to the economic, social and educational development of the healthcare workforce and more broadly the Victorian workforce culture.
- Promotion of good mental health and wellbeing and the prevention of mental ill health in workers beyond the context of COVID-19 to deliver economic and social benefits.

Recommendation 1: Increase current levels of State Government funding to the healthcare sector.

In the *Victorian Budget 2022/23*, funding of \$1.3 billion was committed for brand-new initiatives to rebuild the state's mental health system.

- Additional funding should be allocated to the provision of mental health and wellbeing assistance and services for first-line respondents and healthcare organisations.
- Additional funding should be allocated to increase the capacity of healthcare organisations to address systemic issues around workforce shortages.

Recommendation 2: Establish and coordinate a state-wide framework to implement mental health support programs into healthcare services

- Establish minimum requirements for healthcare services to follow around availability and access to mental health support programs and services.
- Consult key representatives and personnel from across the sector (i.e., hospitals, primary care, aged care, paramedics etc) and involve in decision-making processes.
- Ensure equity in access to mental health support programs, by providing additional support to smaller organisations (e.g. small GP practices, single aged care facilities) and worker groups such as casual employees and contractors.

Recommendation 3: Increase accessibility and availability of appropriate counselling and support services for health- and aged-care workers to reduce inequities in mental health and wellbeing outcomes.

- Upscale existing counselling services to enable timely and appropriate access to services.
- Increase the number of workplace counselling sessions available to staff.
- Ensure staff have access to support services (including onsite and telehealth mental health and wellbeing services such as Employee Assistance Programs) during- and after-work hours and allow flexible scheduling arrangements.
- Ensure that all staff, including contractors and casual staff, have access to appropriate services.
- Ensure counselling service providers are adequately trained and familiar with onsite working conditions specific to health- and aged-care services.

Recommendation 4: Mental health and wellbeing counselling training for management staff

- Provide training in basic counselling skills to management staff and consider including related training modules as part of the suite of work health and safety training.

Recommendation 5: Active and meaningful promotion of good wellbeing and mentally healthy culture in the workplace

- Promote team-building activities and peer-support exercises to boost staff morale and optimism (e.g. staff wellbeing officers, trivia, forums).
- Increase opportunities for staff to interact directly with senior management and decision makers to provide feedback or voice concerns. Examples of this may be all staff forums with Q+A sessions or regular onsite walkthroughs.
- Ensure these opportunities are available to all staff including night shift workers and non-clinical worker groups.

Recommendation 6: Continued prioritisation of worker leave entitlements

- Establish a workplace culture that encourages staff to prioritise their own health and wellbeing by taking entitled leave when appropriate. This may help to alleviate high levels of workforce burnout and decrease resilience concerns.
- Pre-plan and prepare for workforce shortages during anticipated 'peak' leave periods (e.g. Christmas/festive season (Dec-Jan), school holidays, 'flu season' (Jun-Aug)).

Recommendation 7: Establish a mental health and wellbeing surveillance system and continued funding into mental health and wellbeing research

- Establish state-wide standards and tools for surveillance of health- and aged-care worker mental health and wellbeing (e.g. surveys using validated outcome measures).
- Fund further research, beyond the context of COVID-19, to develop and evaluate evidence-based interventions to support healthcare worker mental health and wellbeing.
- Implement best-practice policies and evidence-based strategies to establish long-term psychological support networks in the workplace.

2. BACKGROUND AND OBJECTIVES

2.1. BACKGROUND, RATIONALE AND OVERVIEW

The COVID-19 pandemic continues to significantly impact individuals and organisations globally. Despite Australia being one of a few countries to achieve initial control of COVID-19, recurrent incursions of infections in the State of Victoria led to an extended state of emergency (first declared 16 March 2020).

At the time of study commencement, the pandemic had already had a huge impact on the Australian community. In a cross-sectional survey of >13,800 Australians in the first month of COVID-19 restrictions, mental health problems, including anxiety and depression, were at least twice as prevalent as in non-pandemic circumstances (5). This survey found that anxiety rates were higher among people with direct experience of infection (those diagnosed with or tested for COVID-19, or who had lived with or known someone with COVID-19). Given that our health and aged care workforce provide care to people with COVID-19 and were at higher risk of exposure, establishing the likely impact on this critical workforce, and identifying approaches to support them and mitigate the risks to their health and wellbeing were urgently needed.

Throughout 2020-2021, the Victorian Government implemented extensive COVID-19 suppression strategies throughout Metropolitan Melbourne to reduce viral transmission. These included international travel restrictions, quarantine requirements and school closures. Additional to these, healthcare workers were faced with workplace challenges, including changes to working conditions in care services (e.g., increased use of personal protective equipment (PPE), visitor restrictions, testing, furlough and isolation requirements) concurrent with substantial increased service demand. With the easing of public health restrictions in Victoria, facilitated by high vaccination rates, COVID-19 case numbers have increased significantly. This has placed substantial physical and psychological strain on hospital workers, leading to workforce shortages concurrent with epidemiological peaks, and hospitals have been faced with challenges in maintaining service delivery and meeting demands.

2.2. RESEARCH OBJECTIVES

The COVIC-HA Study aimed to establish a cohort of Victorian health- and aged-care workers (collectively healthcare workers) across four different settings (first responders, hospitals, primary care, aged care) to comprehensively examine the impacts of the COVID-19 pandemic on healthcare and aged care workers and workplaces over time using a mixed-methods approach.

It investigated the physical, psychosocial and wellbeing effects (including personal wellbeing, life satisfaction, anxiety, low mood and stress). It also examined workplace preparedness and responses, including measures to support workers and/or mitigate risks in workplaces, and will examine the relationships between workplace responses and outcomes. Additionally, workers' compensation claims related to COVID-19 in Victoria was examined across different occupational groups.

Specific objectives include:

1. To establish whether there are meaningful differences in measures of health, depression, anxiety, stress, resilience, wellbeing and life satisfaction between workers from different settings (hospital, ambulance, aged care, primary care) during the COVID-19 pandemic, including changes over time
2. To establish whether there are meaningful differences in measures of health, depression, anxiety, stress, resilience, wellbeing and life satisfaction between infected workers, workers isolated or quarantined due to COVID-19 and workers who have not undergone a period of isolation or quarantine, including changes over time
3. To establish whether measures of health, depression, anxiety, stress, resilience, wellbeing and life satisfaction in healthcare and aged care workers differ from population norms (measured during the COVID-19 pandemic)
4. To explore the lived experiences of healthcare and aged care workers in the context of the COVID-19 pandemic, including workers with a personal experience of COVID-19 infection, those who were quarantined and those who share their workplaces
5. To identify measures implemented by workplaces that were perceived by healthcare and aged care workers to ameliorate or exacerbate the physical, psychosocial and wellbeing impacts of COVID-19
6. To compare workers' compensation claims related to COVID-19 in Victoria across different occupational groups and settings in the healthcare and aged care sectors and with COVID-19 related claims in other industries.

Study sites included Alfred Health, Peninsula Health, Monash Health, Cabrini Health, 26 primary care practices that are members of the Monash Practice Based Research Network (MonReN), Regis residential aged care facilities and aged care facilities affiliated with Monash Health.

2.3. RESEARCH GOVERNANCE

The **Executive Group** was responsible for the operational aspects of the project, including engaging with investigators and key stakeholders, coordinating work packages and managing the budget. The **Scientific Leadership Group** consists of all listed chief investigators. This group provided strategic input into study protocols, liaison with participating healthcare organisations, and progressing workflow within the research streams (Qualitative research stream, Organisational preparedness and response stream, Hospital stream, Ambulance stream, Aged care stream, Primary care stream).

An **Advisory Committee** was established with Committee member representation from key stakeholder organisations. This independent Committee were involved in reviewing and advising on research protocols and emerging results in addition to providing advice on research dissemination to influence policy, practice, and training.

2.4. PROJECT TIMELINE

The COVIC-HA Study commenced participant recruitment in March 2021 and formally ended in April 2023 (Figure 1).

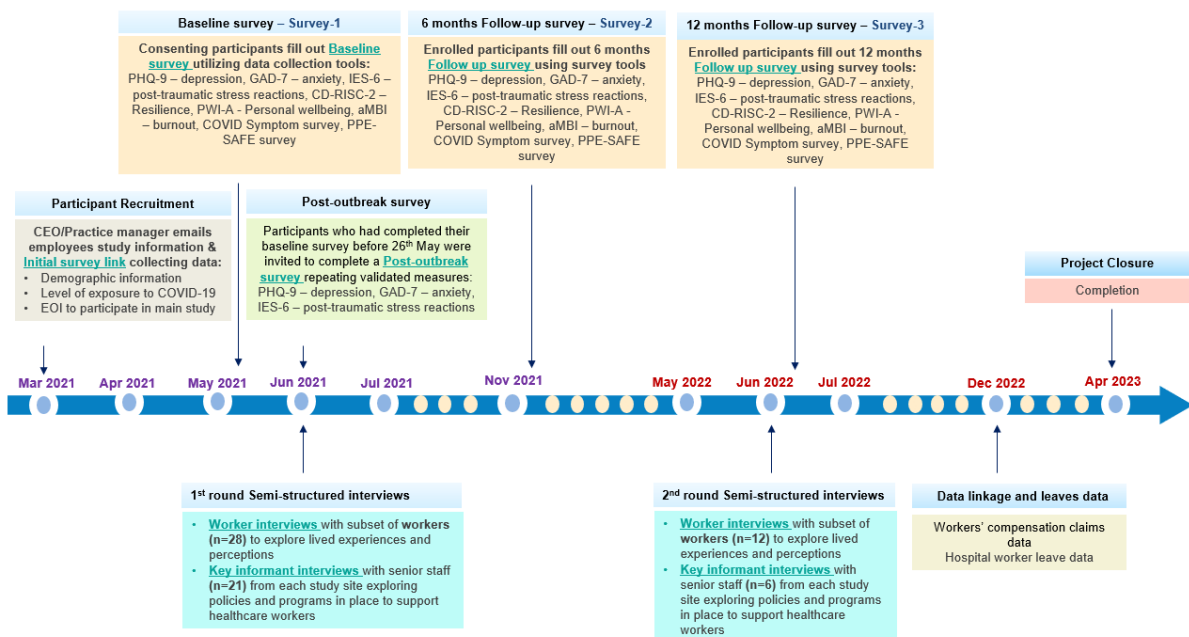


Figure 1. COVIC-HA Study Project Timeline (March 2021 – April 2023)

2.5. PROJECT MILESTONES

Project Milestone	Completion Date	Status
Secure ethics at all involved sites Recruitment of target cohort (1500 HCWs) Completion of baseline questionnaires by participants	30 June 2021	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Not Achieved
Completion of first round of qualitative interviews with workers and key informants	30 September 2021	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Not Achieved
Completion of 6-month questionnaires by participants	31 December 2021	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Not Achieved
Completion of Survey-3 (12-month questionnaire) by participants Completion of second round of qualitative interviews	30 June 2022	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Not Achieved
Data linkage analysis of WorkSafe Victoria Workers' Compensation Claims data	30 March 2023	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Not Achieved
Analyses and delivery of final report	21 April 2023	<input checked="" type="checkbox"/> Achieved <input type="checkbox"/> Not Achieved

2.6. PROJECT OUTCOMES

The COVIC-HA Cohort Study has investigated impacts of the COVID-19 pandemic on health and aged care workers and workplaces over time. All project deliverables have been fulfilled within the allocated budget.

Specific project deliverables have included:

1. Reporting of measures of health, depression, anxiety, stress, resilience, wellbeing and life satisfaction amongst a cohort of HCWs from different settings (hospital, ambulance, aged care, primary care) at three timepoints during the COVID-19 pandemic (mid-2021, late-2021 and mid-2022)
2. Quantification of changes in mental health and wellbeing outcomes over time and differences between occupational groups amongst our cohort.
3. Analysis and description of lived experiences of healthcare and aged care workers in the context of the COVID-19 pandemic.
4. Analysis and description of HCWs' perceptions of employing organisations' responses to the COVID-19 pandemic, including identification of measures perceived to ameliorate or exacerbate the physical, psychosocial and wellbeing impacts of COVID-19.
5. Comparison of workers' compensation claims directly related to COVID-19 in Victoria across different industries (including in the healthcare and aged care sectors and other industries) and occupational groups.

3. RESEARCH FINDINGS

3.1 PROJECT OUTPUTS (PUBLICATIONS)

- **Published.** McGuinness SL, Johnson J, Eades O, et al. Mental Health Outcomes in Australian Healthcare and Aged-Care Workers during the Second Year of the COVID-19 Pandemic. *Int J Environ Res Public Health*. 2022;19(9):4951. Published 2022 Apr 19. <https://doi.org/10.3390/ijerph19094951> (see [Section 3.2 Baseline Survey Findings](#)) (3).
- **Published.** McGuinness SL, Johnson J, Eades O, Clifford S, Fisher J, Kirkman M, et al. Organisational responses to the COVID-19 pandemic in Victoria, Australia: A qualitative study across four healthcare settings. *Front Public Health*. 2022;10:965664. (see [Section 3.3. First Round of Qualitative Findings](#)) (1).
- **Published.** McGuinness SL, Eades O, Grantham KL, et al. Mental health and wellbeing of health and aged care workers in Australia, May 2021 – June 2022: a longitudinal cohort study. *Med J Aust* 2023; doi: 10.5694/mja2.51918 (see [Section 3.4. Longitudinal Cohort Analysis Findings](#)) (2).
- **In development.** McGuinness SL, et al. Longitudinal qualitative reflections on the COVID-19 pandemic (see [Section 3.5. Longitudinal Qualitative Findings](#)).
- **Submitted.** McGuinness SL, Zhong S, Eades O et al. Workplace leave patterns among Victorian healthcare workers during the COVID-19 pandemic (see [Section 3.6. Hospital Worker Leave Analysis](#)).
- **Submitted.** Kelsall HL et al. Workers' compensation claims for COVID-19 among workers in health care and other industries during the pandemic, Victoria, Australia (see [Section 3.7. COVID-19 Workers' Compensation Claims Data Analysis](#)).

PUBLISHED FINDINGS

3.2. BASELINE SURVEY FINDINGS

Baseline survey findings have been published (<https://doi.org/10.3390/ijerph19094951>).

A total of 984 enrolled participants provided complete survey responses to the Baseline survey. The COVIC-HA cohort comprised predominantly female participants (72.6%), which is reflective of the healthcare workforce gender profile. Highest participation was observed from the hospital setting (82%), followed by ambulance, whereas low involvement was seen in aged care and primary care settings. Within occupational groups, the highest rate of participation was observed from nurses (32.4%), closely followed by the non-clinical support staff (24.6%) which is mostly made up of administrative and clerical employees.

Baseline survey data indicated a prevalence of moderate-severe symptoms of depression (PHQ-9 scale) in 22.7%, moderate-severe anxiety (GAD-7 scale) in 14% and moderate-severe post-traumatic symptoms (IES-6 scale) in 20.4% of the total cohort respectively. The highest depression, anxiety and post-traumatic stress was seen in paramedics and nurses, and lowest among doctors. Increased burnout associated with emotional exhaustion was seen in 65.1% of the respondents, and were reported by over two-thirds of the paramedics (69%) and nurses (72%). The highest depersonalisation scores and lowest personal accomplishment scores were reported among paramedics, indicative of increased levels of burnout. High scores for resilience were observed across occupations (CD-RISC-2 scale), and a third (33.4%) reported high optimism (score ≥ 8). Qualitative analysis of free-text responses to the survey question asking to reflect on HCWs' personal experience of COVID-19 identified four overarching themes related to working in a complex and changing environment, concerns about patient care, isolation and disconnection, and silver linings.

3.3. FIRST ROUND OF QUALITATIVE FINDINGS

Findings from the first round of qualitative interview findings have been published (<https://doi.org/10.3389/fpubh.2022.965664>).

Semi-structured interviews with 28 HCWs and 21 key informants yielded themes reflecting insights and first-hand reports of COVID-19 pandemic effects in the workplace. Worker interviewees were comprised of workers from hospitals, aged care, ambulance and primary care belonging to varying professions and COVID-19 infection status, and Workplace interviewees included senior personnel with key knowledge about their respective organisation's preparedness and response to the COVID-19 pandemic, including at least one in a senior clinical role (e.g. medical executive or nurse manager) and one person in a senior occupational health and safety/infection control.

Data from the Worker and Workplace interview transcripts were thematically analysed and collated to map out a comprehensive needs-assessment to inform policy improvements to support healthcare workers in the context of COVID-19. Emergent sub-themes derived from participant quotes and idea were organized into three key themes – navigating a changing and uncertain environment, maintaining service delivery during a pandemic, and meeting the psychological needs of staff as outlined below:

1. Navigating a changing and uncertain environment

- active engagement between decision makers and workers
- Clear and consistent communication
- Pandemic (un)preparedness and coordination

2. Maintaining service delivery during a pandemic

- Resourcing and logistical challenges
- Greater physical and mental demands of work
- Sustaining the response

3. Meeting the psychological and safety needs of staff

- Investment in wellbeing and mental health
- Infection prevention control training, support and guidance
- Acknowledgement and recognition

3.4. LONGITUDINAL COHORT ANALYSIS FINDINGS

The longitudinal cohort findings have been published (<https://doi.org/10.5694/mja2.51918>).

Between 984 and 1153 Victorian HCW responses were received at each of our survey timepoints (see Figure 3). Of the 984 participants who completed Survey-1, 496 (50.4%) contributed to complete longitudinal data (i.e., completion of all three surveys). Our analysis primarily focuses on understanding changes in mental health outcomes over time in the overall participant cohort.

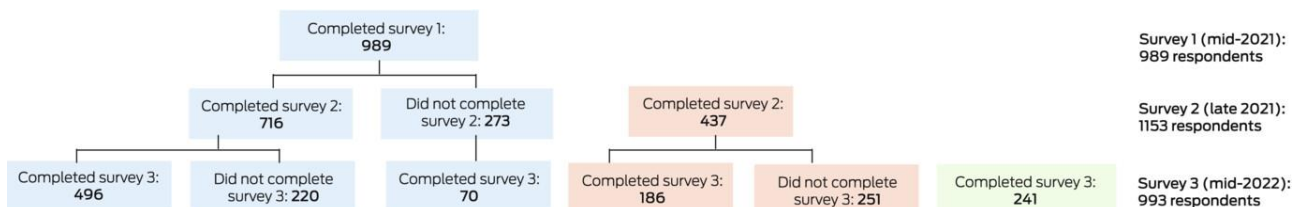


Figure 2. Survey participant recruitment flowchart.

Across all HCW occupational groups, we found that moderate-severe symptoms of depression, anxiety and PTS peaked in late 2021, and by mid-2022 returned to similar levels as were seen in mid-2021 (Figure 3). In contrast, a different pattern was observed for the prevalence of moderate to severe symptoms of burnout (in emotional exhaustion, depersonalisation and personal accomplishment)– all of which were higher in mid-2022 than in mid-2021 have progressively increased. Similarly, we observed a steady decline in the levels of high optimism and scores for resilience among HCWs (Figure 3).

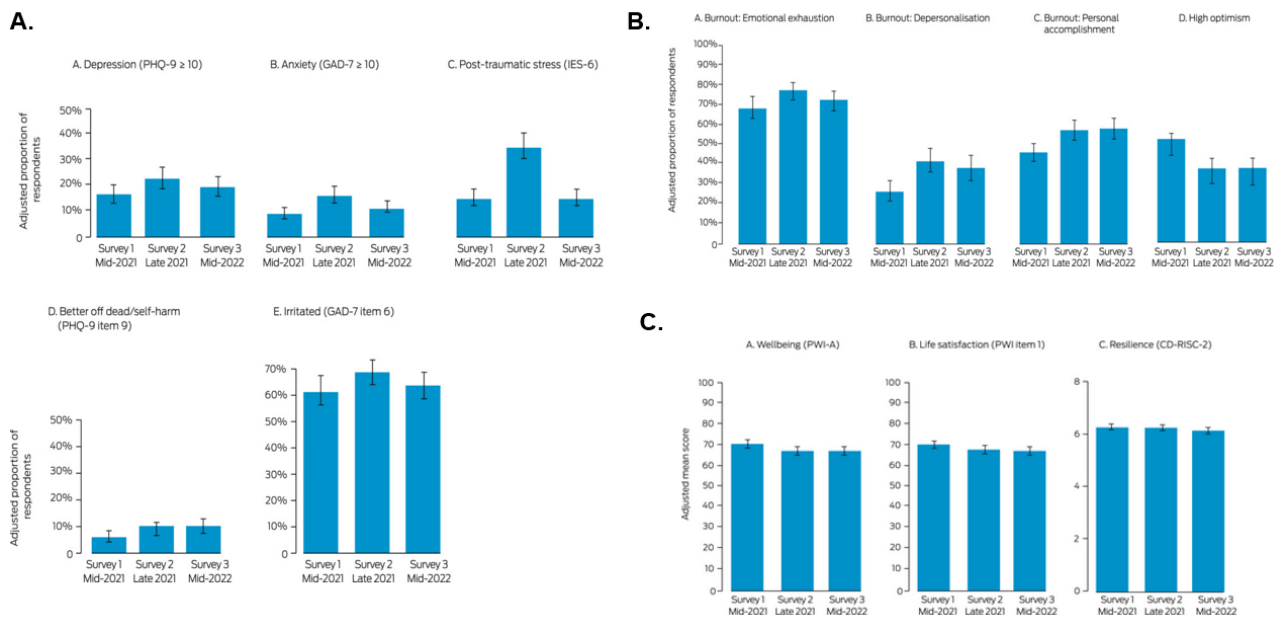


Figure 3. Findings for mental health and wellbeing outcomes with 95% confidence intervals by survey, after adjusting for age, gender and socio-economic status. **A)** Adjusted proportions of respondents who reported moderate to severe symptoms of depression, anxiety or post-traumatic stress or being irritable on at least some days (GAD-7 item 6) or thoughts of being better off dead on at least some days (PHQ-9 item 9). **B.** Adjusted proportions of respondents who reported moderate to severe burnout or high optimism. **C.** Adjusted mean scores for resilience, wellbeing and life satisfaction.

Our analysis also explored HCW perceptions on how COVID-19 impacted on home, social and workplace factors (Figure 4). Notable findings included:

- an increase in the proportion of HCWs considering leaving their profession due to COVID-19 from 32.3% in mid-2021 to 54.0% at mid-2022;
- incremental increases in the proportion of HCWs seeking mental health support during the pandemic;
- peaks in the proportion of HCWs reporting concern about contracting COVID-19 at work, transmitting COVID-19 to others, workplace-related social isolation, impacts COVID-19 restrictions on daily life and increased alcohol consumption were observed in late-2021; and
- decrease in various areas relating to workplace satisfaction in mid-2022, including perception of an organisation's care for staff welfare, whether HCWs felt comfortable to voice concerns and whether corresponding actions were satisfactory

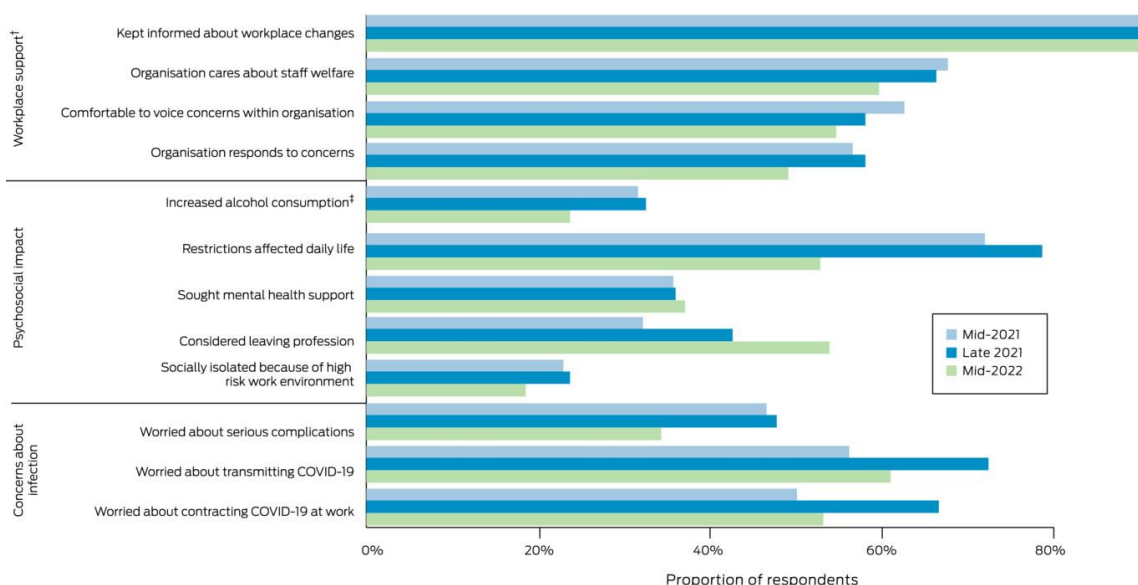


Figure 4. Perceptions of psychosocial impact, workplace support and personal COVID-19 risk.

4. PROJECT REFLECTIONS AND IMPACTS

4.1. PROJECT REFLECTIONS

Over the course of this study, we have successfully investigated the impacts of the COVID-19 pandemic on a cohort of Victorian health and aged care workers and their workplaces over time. We utilised an open cohort recruitment design to maximise engagement. However, it is important to acknowledge the challenges we faced and future areas for improvement.

First, the lack of available pre-pandemic data on the mental health of Australian health- and aged-care workers limited our ability to determine the extent to which the pandemic contributed to the observed prevalence of moderate-severe symptoms of depression, anxiety, and burnout. Second, our study was subject to convenience sampling and voluntary participation bias, and there was loss to follow up of some participants over time. Additionally, we were unable to recruit sufficient participants from primary and aged care settings, precluding our ability to conduct meaningful cross-setting analysis. This perhaps is reflective of the substantial burden that frontline workers, in particular aged-care and primary care workers have and continue to endure throughout the pandemic. Finally, as most respondents worked in the South Eastern suburbs of Melbourne (i.e., Monash Partners location), the generalisability of our findings to other healthcare settings in Australia is uncertain. Expanding the eligibility criteria to more healthcare sites would require additional funding and resources.

4.2. KNOWLEDGE AND HEALTH IMPACTS

- Generation of new knowledge with findings relating to the prevalence and epidemiology of mental health and wellbeing outcomes amongst health- and aged-care workers during the COVID-19 pandemic released into the public domain.
- Publications in national and international journals with high impact factors – International Journal of Environmental Research and Public Health (4.614), Frontiers in Public Health (6.461), Medical Journal of Australia (7.738).
- International readership demonstrated through publication retweets and social media sharing, accessed over 3000 times.
- Conference presentation at the Australasian Society for Infectious Diseases Annual Meeting (over 500 attendees).
- Evidence-based recommendations, policies and measures to improve mental health and wellbeing in addition to productivity and retention of the healthcare and aged care workforce presented in publications and this report.
- Future planned publications include analysis of workers' compensation claims across all Victorian industry groups, with important implications for health and economic policies.
- Opportunities for policy translation and implementation through Dr Sarah McGuinness' role as a member of the Improving the Health of Healthcare Workers (IHHCW) Working Group, a joint initiative by the Royal Australasian College of Physicians Policy and Advocacy Unit and the Australasian Faculty of Occupational and Environmental Medicine (AFOEM).

5. CLOSING REMARKS

Longitudinal analysis of quantitative and qualitative data collected during our study shows that moderate-severe symptoms of mental health disorders have remained prevalent among the Victorian healthcare workforce during the COVID-19 pandemic. We found that symptoms of depression, anxiety and post-traumatic stress peaked in late-2021, whereas burnout, optimism, wellbeing and resilience worsened over time.

With the pandemic imposing ongoing demands on HCWs, governments and healthcare services need to continue to preserve HCWs physical and mental wellbeing through the implementation of evidence-based measures and policies. Additionally, ongoing and standardised monitoring of the status of healthcare worker mental health and wellbeing is imperative as the pandemic evolves through different stages and brings new challenges. Examples of strategies may include long-term investment into the workforce, improvements on existing mental well-being support frameworks within the workplace and prioritisation of leave entitlements.

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