

First Nations parents' experiences of COVID-19 and associations with symptoms of complex post-traumatic stress disorder



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Abstract

Purpose To examine associations between First Nations parents' experiences during the COVID-19 pandemic and symptoms of complex post-traumatic stress disorder (C-PTSD).

Methods First Nations parents ($n = 110$) completed a 90-minute telephone interview between October 2021 and July 2022. Parents self-reported their PTSD or C-PTSD symptoms using the International Trauma Questionnaire (categorised as no/low vs. high levels), COVID-19 events (e.g. testing, diagnosis, isolation) and perceived socioemotional changes in life situation (e.g. quality of relationships) compared with before the pandemic. Logistic regression analysed associations between C/PTSD symptoms (outcome) and demographic factors, COVID-19 events, perceived socioemotional changes since COVID-19 (exposures).

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Main findings More than a quarter (27%) of parents reported high levels of C-PTSD/PTSD symptoms. Most (90%) reported at least one COVID-19 event. Parents who had experienced worsening racism and inequality since the pandemic (OR 0.29, 95% CI 0.11–0.79) or held a Health Care Card (OR 0.27, 95% CI 0.10–0.74) were significantly less likely to report no/low levels of C-PTSD/PTSD symptoms.

Principal conclusions Financial stress, racism and inequality were associated with increased trauma symptoms, highlighting the importance of implementing trauma-informed public health emergency responses during a pandemic. Those who had fewer disruptions to cultural practices were more likely to be resilient to the stressors of the pandemic, reinforcing the need for a culturally-responsive, trauma-informed public health emergency framework for First Nations communities. Emergency responses that address these factors while optimising safe opportunities to maintain cultural obligations and social connection are essential.

Keywords: First Nations; COVID-19; PTSD; Complex trauma; Aboriginal and Torres Strait Islander peoples; Public health emergency

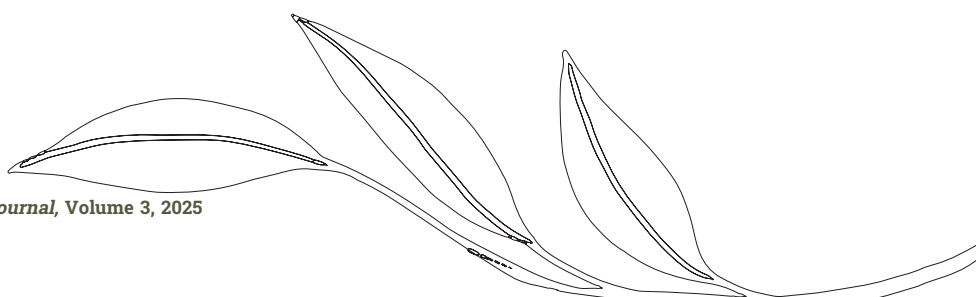
Highlights

- Minimising financial stress, racism and inequality were associated with reduced levels of trauma symptoms, highlighting the importance of implementing trauma-informed public health emergency responses during a pandemic.
- Those who had fewer disruptions to cultural practices were more likely to be resilient to the stressors of the pandemic, reinforcing the need for a culturally-responsive, trauma-informed public health emergency framework for First Nations communities.
- Emergency responses that address these factors while optimising safe opportunities to maintain cultural obligations and social connection are essential.
- This study supports the implementation of a proposed culturally-responsive, trauma-informed public health emergency framework for First Nations communities.

Introduction

The Coronavirus (COVID-19) pandemic caused widespread global disruption ([World Health Organization 2020](#)). Australia's first case was detected in January 2020 ([Supplementary Figure 1 \[Gall et al. 2022\]](#)), a period immediately following a series of extreme natural disasters (drought and bushfires), followed by flooding in the later stages of the pandemic ([Kemter et al. 2021](#); [Shakespeare-Finch et al. 2020](#)). Australian federal, state and territory

governments rapidly sought to contain the virus through mandates on movement ('lockdowns'), mask wearing and, later, vaccination programs ([Gall et al. 2022](#); [Storen and Corrigan 2020](#); [COVID-19 National Incident Room Surveillance Team 2020](#)). These measures aimed to reduce infection rates, protect the population from harm and avoid overloading the health system ([Storen and Corrigan 2020](#); [COVID-19 National Incident Room Surveillance Team 2020](#)). Financial and food security were impacted by social





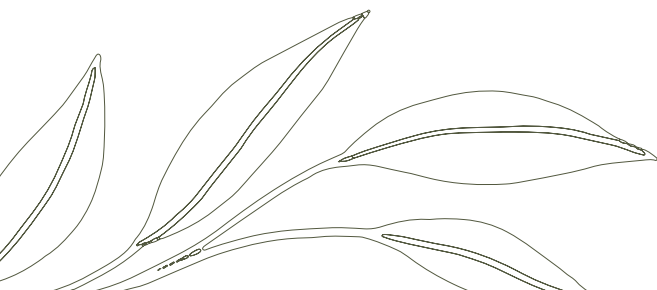
and economic disruptions ([World Health Organization 2020](#); [Australian Institute of Health and Welfare 2021](#)). The government economic response included increased financial support, welfare payments and a guaranteed income for many workers and businesses ([Lim et al. 2021](#); [Australian Institute of Health and Welfare 2021](#)).

Early in the pandemic, mortality in First Nations communities was minimised by restricting access to remote communities to mitigate viral spread ([Australian Institute of Health and Welfare 2021](#); [Crooks et al. 2020](#)). The community-controlled sector led a coordinated, community-centred response reinforced by a dedicated First Nations advisory group within the Australian Government Department of Health, and initially saw lower infection rates among First Nations peoples than non-Indigenous people ([Australian Institute of Health and Welfare 2021](#); [Australian Government Department of Health 2022](#); [Crooks et al. 2020](#); [Australian Institute of Health Welfare 2022](#)). First Nations peoples comprised 2.5% of all COVID-19 cases in Australia; however, the rate of severe disease was 1.4 times higher than non-Indigenous people with COVID-19 ([Australian Institute of Health Welfare 2022](#)).

As with the H1N1 pandemic, First Nations peoples in Australia had significantly higher rates of infection, and poorer health and wellbeing outcomes during COVID-19 ([World Health Organization 2020](#); [Thurber et al. 2021a](#); [Yashadhana et al. 2020](#); [Australian Institute of Health and Welfare 2021](#); [Flint et al. 2010](#); [Rudge and Massey 2010](#); [Australian Government Department of Health 2021](#)). This was compounded by disruptions in connections to community and culture ([Power et al. 2020](#); [Australian Institute of Health and Welfare 2021](#); [Kennedy et al. 2022](#); [Graham et al. 2022](#)). First Nations concepts of health and wellbeing extend

beyond the physical health of the individual to include the social, emotional and cultural wellbeing of the entire community ([Sharma et al. 2024](#); [Salmon et al. 2019](#)) where key aspects of cultural wellbeing include connection to Country; beliefs and knowledge; language; family, kinship and community; cultural expression and continuity; and self-determination and leadership ([Bourke et al. 2022](#)). Public health orders restricting movement and social gatherings prevented participation in important cultural events, including Sorry Business, births and marriages ([Shakespeare-Finch et al. 2020](#); [Australian Institute of Health and Welfare 2021](#); [Kennedy et al. 2022](#); [Power et al. 2020](#)). Sorry Business is a First Nations concept centred around the practices of dying, death and funerals ([Carlson and Frazer 2015](#)); it is considered an important part of culture and maintaining connection to community and Country ([Carlson and Frazer 2015](#)). This had a profound impact on the social, emotional and cultural wellbeing of First Nations peoples.

Although lockdowns were one way to reduce the transmission of COVID-19, they also reduced social connection and increased the risk of poorer mental health outcomes ([Heris et al. 2022](#); [Australian Institute of Health and Welfare 2021](#); [Gall et al. 2022](#)). As with previous pandemics, people of all socioeconomic backgrounds reported mental health impacts of COVID-19, including increased anxiety, depression and psychotic symptoms ([Wang et al. 2022](#)). However, certain population groups were at increased risk, including those in overcrowded housing, with poor work conditions, fewer social and financial buffers, and existing chronic and mental health conditions ([Heris et al. 2022](#)). These factors impact how people respond to public health directions and their capacity to make safe choices ([Cullen et al. 2020](#)). This includes people who develop post-traumatic stress disorder (PTSD) or complex PTSD (C-PTSD) in response to





severely traumatic events, which may be exacerbated during a crisis such as a pandemic.

Post-traumatic stress disorder can develop after experiencing or witnessing a traumatic event. Complex PTSD is associated with exposure to prolonged or repeated traumatic events from which escape is not possible, often experienced in childhood or adolescence (Wamser-Nanney et al. 2021). These exposures can include physical, sexual or mental abuse, as well as neglect or witnessing domestic violence (Wamser-Nanney et al. 2021).

First Nations peoples are overrepresented in the prevalence of trauma symptoms. Current levels of PTSD symptoms are estimated to be 4.5 times higher in First Nations than non-Indigenous peoples (Nasir et al. 2022). Both PTSD and C-PTSD have significant impacts on a wide range of health and wellbeing outcomes. These include the social and emotional wellbeing of parents, which can lead to intergenerational cycles of trauma (Chamberlain et al. 2019). Systemic and interpersonal racism and inequality have negatively impacted the socioeconomic, socioemotional and health outcomes of First Nations peoples since colonisation, compounding ongoing intergenerational trauma (Markwick et al. 2019).

Several studies have been conducted with First Nations communities in Australia regarding COVID-19 impacts on mental health, wellbeing and quality of life (Thurber et al. 2021a; Gall et al. 2022; Healing Foundation 2021). What is not known is the degree of trauma-related distress that may have been ‘triggered’ in First Nations peoples in Australia by COVID-19. Adequate tools to measure psychological wellbeing are critically important to understanding prevalence, designing support pathways and

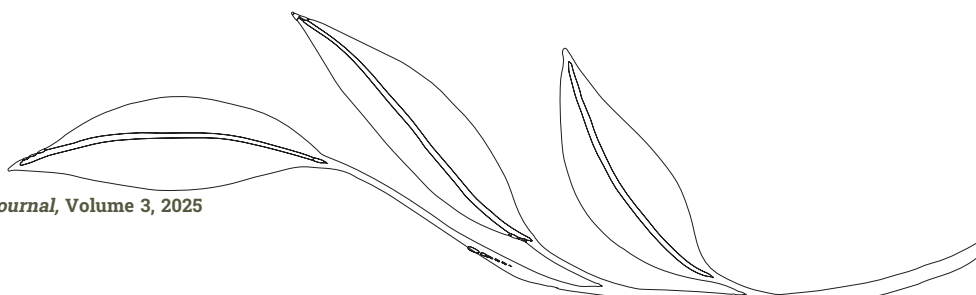
evaluating programs (Gee et al. 2024). However, most tools are not specific to First Nations peoples and grounded in Western concepts of health and wellbeing (Sharma et al. 2024). Misapplication of mainstream tools that are not trauma-informed or validated with First Nations peoples can result in misdiagnosis, further marginalisation and impede access to appropriate and culturally relevant care (Sharma et al. 2024; Gee et al. 2024; Brinckley et al. 2021). This sub study was conducted as part of a broader project to develop a culturally valid assessment tool for Aboriginal and Torres Strait Islander parents experiencing complex trauma, based on the International Trauma Questionnaire (Gee et al. 2024; Graham et al. 2022; Kennedy et al. 2022; Blignault et al. 2024).

This study aimed to explore associations between experiences of COVID-19 events (such as testing, diagnosis, isolation), change of life situation (such as quality of personal relationships, access to services, experiences of racism) and levels of C-PTSD/PTSD distress symptoms reported among First Nations parents.

Methods

Study design and context

The Healing the Past by Nurturing the Future (HPNF) study aimed to improve support for First Nations peoples experiencing complex trauma (C-PTSD) during the perinatal period and beyond, which is a community priority. When the first COVID-19 wave hit Australia, the authors were preparing to commence interviews with First Nations parents, to inform the development of a culturally-adapted complex trauma assessment tool (Gee et al. 2024) as part of the HPNF project. The original questionnaire was designed to collect data describing parents’ experiences of complex trauma-related distress and strengths, but





given the pandemic's potential influence on responses, additional questions were added regarding experiences during COVID-19 (COVID-19 specific events and perceived changes in life situation because of the pandemic). These additional COVID-19 questions contributed to a sub-project of HPNF to develop a culturally-responsive trauma-informed public health emergency framework for First Nations peoples (Graham et al. 2022). Fieldwork occurred throughout the COVID-19 pandemic, with telephone interviews conducted between October 2020 to July 2022. Participants were recruited from three Australian jurisdictions: Northern Territory, South Australia and Victoria. This paper reports cross-sectional results from those telephone interviews.

Participants

Snowball recruitment via community networks and health services was used, with flyers displayed in waiting rooms and paid (Facebook) and unpaid (X, formerly Twitter) social media advertisements to recruit participants. Eligible participants were those who self-identified as Aboriginal or Torres Strait Islander, were over 16 years of age and a parent or expectant parent. Parents aged 16 or 17 years could be excluded if they were not considered capable of understanding or providing informed consent or their caregivers were not willing to provide consent for them to participate. Participants received gift cards and a small gift in acknowledgement of their time. This was determined with the study partners and the broader HPNF governance. Wellbeing checks were conducted following recruitment, which included connecting participants with additional support if required.

Data sources

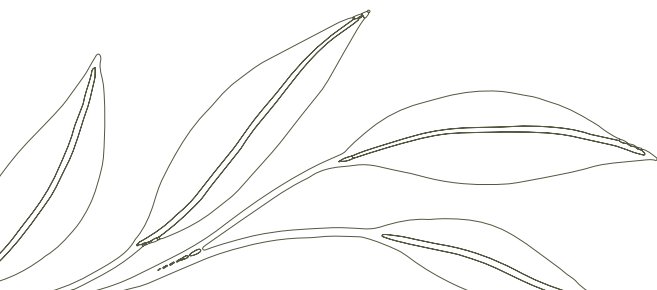
Trained health professionals and researchers were employed to interview participants, using a

standardised survey with validated questions from the International Trauma Questionnaire and newly developed COVID-19-related questions based on items from the Coronavirus Health Impact Survey (CRISIS) (Merikangas et al. n.d.) parent/caregiver follow-up form, the study protocol for the COVID-19 Pandemic Adjustment Survey (CPAS) (Westrupp et al. 2020), and consultation with the HPNF project team. Study data were managed using REDCap (Harris et al. 2019; Harris et al. 2009).

Measures Outcome

The International Trauma Questionnaire is a self-reported diagnostic measure of C-PTSD symptoms (Cloitre et al. 2018). Post traumatic stress disorder is diagnosed if a person experiences more than one symptom from each of three criteria: 1) re-experiencing in the here and now, 2) avoidance, 3) sense of threat, plus at least one sign of functional impairment related to these symptoms (Cloitre et al. 2018). A C-PTSD diagnosis requires the presence of at least one symptom from all three PTSD symptom clusters as well as at least one symptom from each of the three Disturbances in Self-Organization clusters that characterise C-PTSD: 1) affective dysregulation, 2) negative self-concept, 3) disturbances in relationships, plus functional impairment related to Disturbances in Self-Organization symptoms (Cloitre et al. 2018).

The primary outcome was a binary variable of whether or not participants experienced levels of symptoms to meet the diagnostic criteria for PTSD or C-PTSD (Cloitre et al. 2018). This was categorised as 'No or low levels of symptoms' (no/low) (did not report any symptoms or did not report symptoms at a level to meet PTSD and/or C-PTSD diagnostic criteria) versus 'High levels' (self-reporting a level of symptoms to meet the PTSD or C-PTSD criteria) (Figure 1).





	High levels		No/low levels
	PTSD	C-PTSD	
Re-experiencing			
Avoidance			
Sense of a threat			
Affective dysregulation			
Negative self-concept			
Disturbances in relationships			

Figure 1: Visual summary of outcome classification. C-PTSD, complex post-traumatic stress disorder; PTSD, post-traumatic stress disorder; Blue, experienced symptom; Orange, did not experience symptom, or did not experience at a level to meet diagnostic criteria.

Demographics

Demographic variables included: Aboriginal and/or Torres Strait Islander status, age (18 to 29, 30 to 39, 40 years and over), sex, number of children (none but currently pregnant, one or two, three or more children), parent post-high school education (yes/no), Health Care Card (yes/no) (this is given to people on low incomes, allowing them to access prescription medications and other health resources at lower prices), and relative neighbourhood-level socioeconomic status based on participants’ residential postcodes, according to the Australian Bureau of Statistics’ 2016 Index of Relative Socio-Economic Disadvantage (IRSD) ([Australian Bureau of Statistics 2018](#)). Percentiles of relatively greatest disadvantage to least were categorised as tertiles of most disadvantaged (1–33%), moderate (34–67%) and least disadvantaged (68–100%).

Exposures

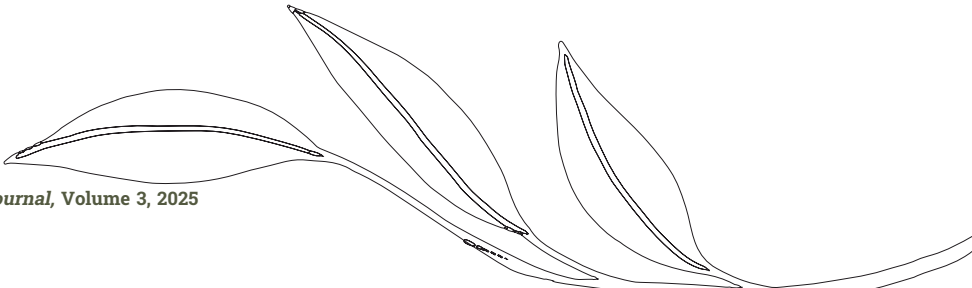
The exposures of interest were experiences of COVID-19 events and perceived socioemotional changes following COVID-19 in regard to relationships, parenting and social conditions.

Participants were asked whether they had experienced eight COVID-19 events (binary exposure measure of did not experience event vs. did): fallen physically ill; been diagnosed with COVID-19; been tested for COVID-19; been required to isolate due to being a close contact; decided to self-isolate because of health concerns related to COVID-19; been required to quarantine due to travel restrictions; been unable to attend the funeral of a close family member or friend; lost job or had paid employment hours reduced.

Participants were asked whether there had been socioemotional changes since COVID-19 compared with before (three categories: a bit easier/a lot easier; a bit worse/a lot worse vs. about the same) in relation to: wellbeing; the quality of personal relationships; ability to maintain social connections with family and friends; ability to access support services or care you need; experiences and/or feelings about racism and/or being unequal; feelings of trust in authorities; feelings of trust in the community; ability to parent and care for your child; child’s wellbeing.

Analysis

Descriptive statistics for the sample are presented (n and % for categorical variables, mean and standard deviation for age). Taking a strengths-based approach, logistic regression was conducted to determine the relationship between absence of negative exposures (i.e. demographic, COVID-19-related events and perceived changes in life situation) and the outcome C-PTSD/PTSD symptom levels (no/low vs. high), reporting odds ratios (OR) and 95% confidence intervals (95% CI). Statistical significance was indicated where $P < .05$. Unadjusted crude ORs and ORs adjusted for age and sex are presented. To account for the variation in context within each state





and territory in relation to COVID-19 regulations and the timing of different waves, vaccine roll outs and mandatory lockdowns, state-by-state breakdown sensitivity analyses were conducted and are reported where informative. All analyses were conducted in Stata SE 16.1.

Ethics and safety

This study received ethics approval from the following committees: in Victoria - St Vincent's Hospital Melbourne (HREC 060/20); Department of Health and Human Services, La Trobe University; Royal Women's Hospital; University of Melbourne; in South Australia - The South Australian Aboriginal Ethics Committee (AHREC 04-20-873) and The Women's and Children's Health Network; and in the Northern Territory - The Central Australian Human Research Ethics Committee (CA-20-3705). The broader HPNF project involved community-based participatory action research, a multi-stage process of stakeholder workshops that allowed for the development of a study approach that maximised safety and minimised the risk of distress for parents. This resulted in the production of a safety framework that ensured the emotional and cultural safety of participants during interviews (Clark et al. 2020).

Research team

The research team and their experiences, perspectives and values influenced how this study was conducted. The study was conceptualised and led by First Nations people (C. Chamberlain, M. Kennedy, S. Graham), including analysis and interpretation. The team comprised people with Aboriginal lived experience (C. Chamberlain, M. Kennedy, S. Graham, T. Glover, C. Atkinson), experience in public health (all authors), mental health and trauma research (C. Chamberlain, K. Jones, C. Atkinson, S. Bennetts), medicine (T. Glover) and Aboriginal health research (C. Chamberlain,

M. Kennedy, S. Graham, T. Glover, C. Heris, C. Atkinson, S. Bennetts). This work contributed to T. Glover's medical degree training.

Governance and partnerships

HPNF has formal partnerships and relationships with: Central Australian Aboriginal Congress (Northern Territory); Nunkuwarrin Yunti of South Australia Inc (South Australia); Women's and Children's Health Network (South Australia); the Royal Women's Hospital Bagarook project (Victoria) and the Bouverie Family Healing Centre Indigenous Family Therapy Program (Victoria). There are multi-institutional agreements with 11 participating organisations for shared intellectual property, and protection of Indigenous cultural intellectual property. This sub-study sat under broader HPNF governance structures but with its own expert working group, including First Nations public health experts and a majority First Nations investigator team, that met monthly.

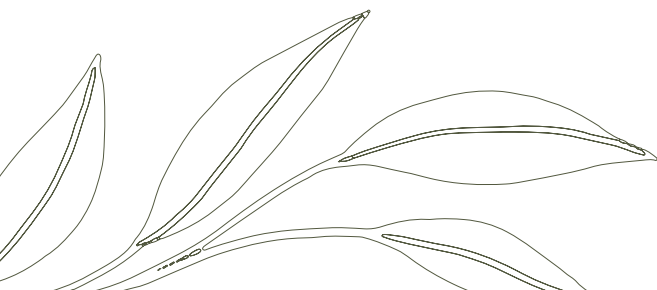
Dissemination

Preliminary findings from this paper were presented at a community stakeholder workshop along with findings from the other project components. Findings from this paper once published will also be shared with key public health emergency response agencies and decision makers.

Results

Participants

A total of 110 participants completed the interview: almost all participants (96.4%) identified as Aboriginal, and the remainder identified as either Torres Strait Islander, or both Aboriginal and Torres Strait Islander. Participants resided in Victoria (n = 52), South Australia (n = 49) or the Northern Territory (n = 9) (Table 1). The mean age was 30.4 years (SD 10.2, range 18–72). The majority of the sample were female (90%), 64% had one or two children, and 81% had post-high school





State (n = 110)	
Northern Territory	8.2% (9)
South Australia	44.5% (49)
Victoria	47.3% (52)
Age (n = 110)	
18 to 29 years	37.3% (41)
30 to 39 years	44.5% (49)
≥40 years	18.2% (20)
Mean age (SD)	34.0 (10.2)
Sex (n = 109)	
Female	89.9% (98)
Male	10.1% (11)
Children (n = 107)	
None (pregnant or children moved out of home)	11.2% (12)
1 to 2 children	63.6% (68)
≥3	25.2% (27)
Post-high school education (n = 110)	
No	19.1% (21)
Yes	80.9% (89)
Have a Health Care Card (n = 110)	
No	49.1% (54)
Yes	50.9% (56)
Neighbourhood-level socioeconomic disadvantage (IRSD) (n = 110)	
Most disadvantaged	54.5% (60)
Medium disadvantage	30.9% (34)
Least disadvantaged	14.5% (16)
PTSD or C-PTSD symptoms (n = 110)	
No/low symptom levels (did not meet criteria)	72.7% (80)
High symptom levels (PTSD or C-PTSD levels)	27.3% (30)
C-PTSD, complex post-traumatic stress disorder; IRSD, Index of Relative Socio-Economic Disadvantage; PTSD, post-traumatic stress disorder.	
Table 1: Sample overview	

education. Half (51%) had a Health Care Card and 55% lived in areas with highest levels of socioeconomic disadvantage. Over one quarter of participants reported high levels of C-PTSD/PTSD symptoms (27.3%). Results were similar in South Australia and Victoria (both 27%) and slightly higher in the Northern Territory (33%).

Complex post-traumatic stress disorder/post-traumatic stress disorder and demographic factors
There was no significant association between having no/low levels of C-PTSD/PTSD symptoms and any of the demographic exposures except for having a Health Care Card (Figure 2, Supplementary Table S1).

Participants who held a Health Care Card were significantly less likely to have no/low levels of symptoms (Adjusted OR 0.27, 95% CI 0.10–0.74) compared with participants who did not have a Health Care Card. This association was particularly strong for parents in South Australia (OR 0.05, 95% CI 0.01–0.39).

Complex post-traumatic stress disorder/post-traumatic stress disorder and participant experiences of COVID-19 events

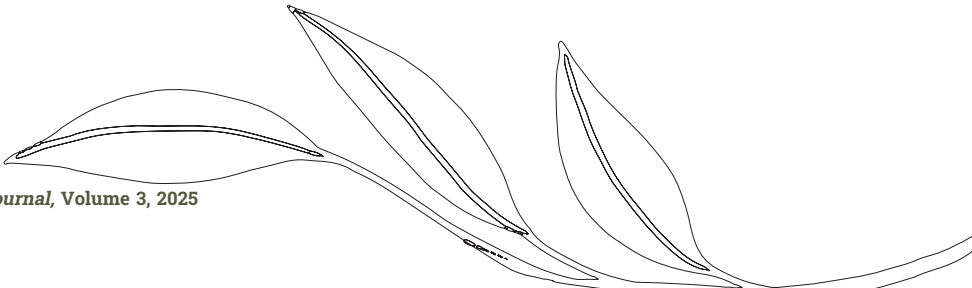
Most participants had at least one direct COVID-19 event (90%) with very few (<3%) reporting that no one in their family had been directly affected. Parents from Victoria reported the highest proportion affected by at least one event (96%), followed by Northern Territory (89%) and South Australia (83%).

Overall, there were no significant associations between COVID-related events and the likelihood of reporting no/low levels of symptoms in the adjusted models (Figure 3, Supplementary Table S2). Victorian participants who had not fallen physically ill (non-COVID specific) were significantly more likely to have low/no C-PTSD/PTSD symptoms compared with those who had been ill (OR 4.40, 95% CI 1.13–17.16).

Complex post-traumatic stress disorder/post-traumatic stress disorder (C-PTSD/PTSD) and perceived socioemotional changes following COVID-19

Figure 4 and Supplementary Table S3 present data relating to participants’ perceived socioemotional changes in their life circumstances compared to before the pandemic, and the association with levels of self-reported C-PTSD/PTSD symptoms. There were few significant associations, with those reporting any change (either better or worse than the year before) trending towards lower odds of no/low levels of symptoms.

Parents who perceived that their experiences of racism and inequality had worsened were significantly more likely to report higher levels of C-PTSD/PTSD



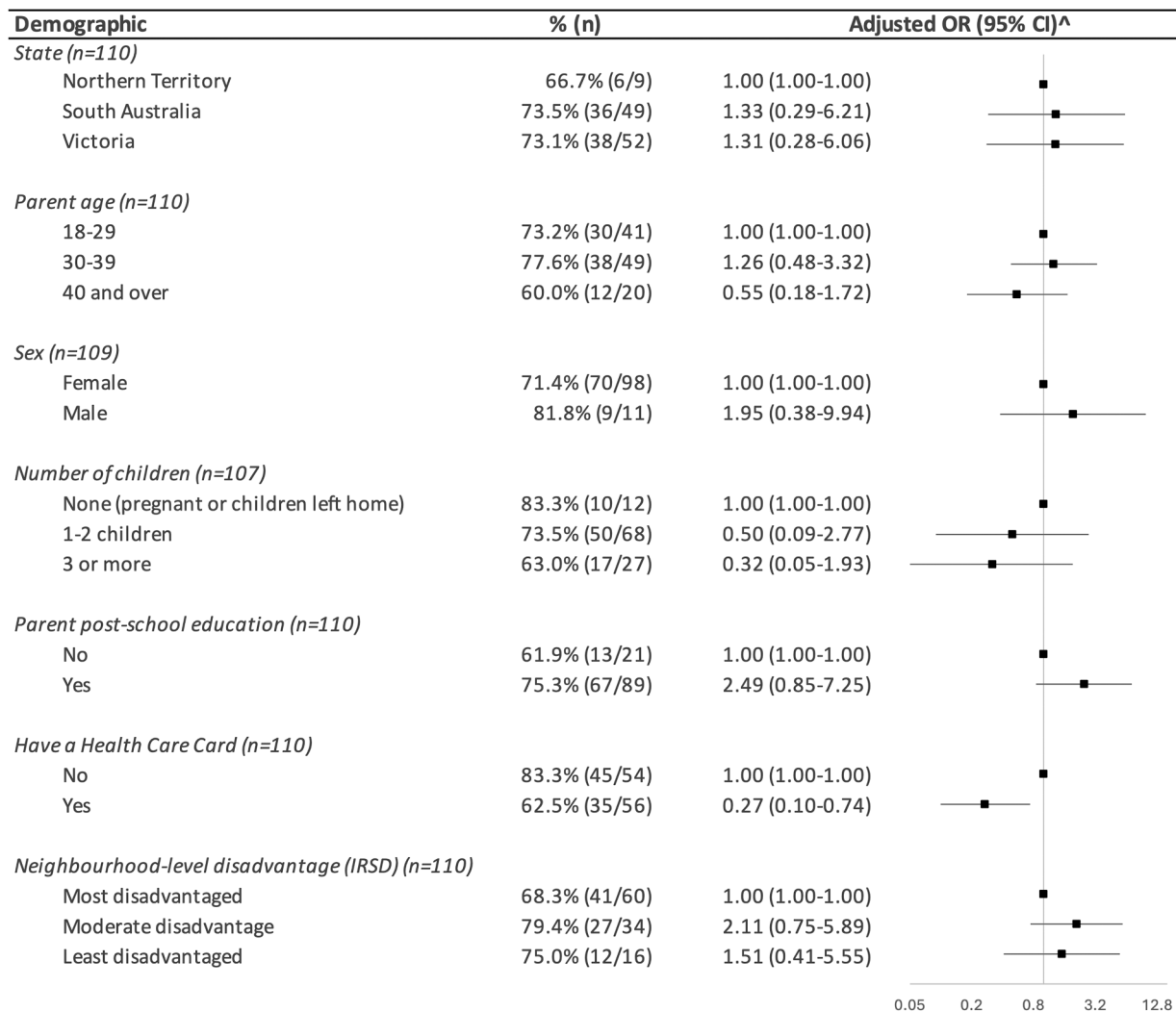


Figure 2: Frequencies and odds of self-reporting no/low C-PTSD (complex post-traumatic stress disorder)/PTSD (post-traumatic stress disorder) symptoms according to demographic factors.^Parent age adjusted for sex only; sex adjusted for age (continuous) only.

symptoms (OR 0.29, 95% CI 0.11-0.79). This association was stronger in South Australia (OR 0.13, 95% CI 0.03-0.65).

Discussion

This cross-sectional survey of First Nations parents across three Australian jurisdictions explored the

relationship between COVID-19 experiences and self-reported complex PTSD/PTSD symptoms. Overall, more than 27% reported high levels of C-PTSD/PTSD symptoms. Exposure to COVID-19 impacts were near universal. There was a trend towards higher levels of C-PTSD/PTSD symptoms among those living in more disadvantaged neighbourhoods and those

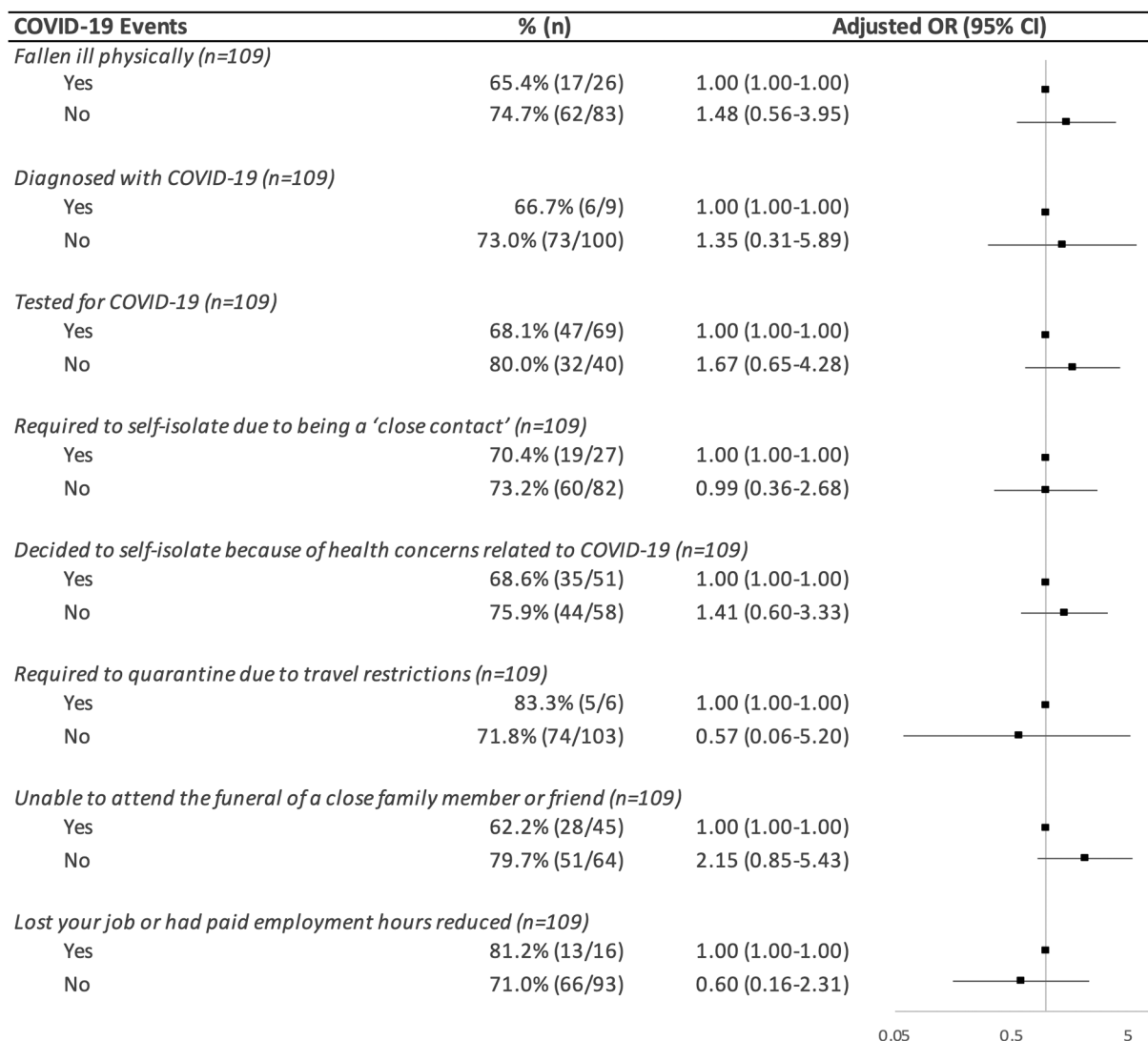
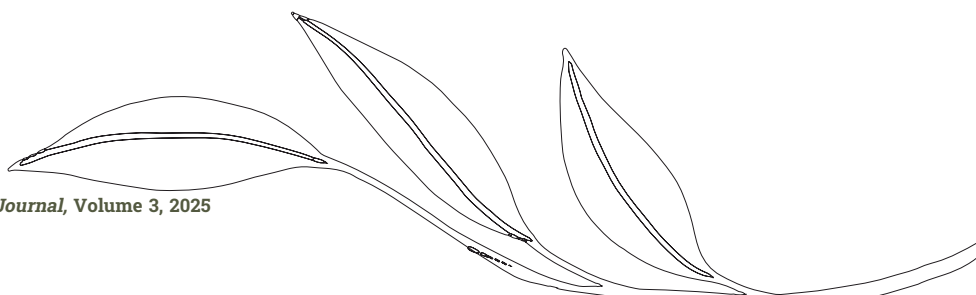


Figure 3: Relation of COVID-19 events to self-reporting no/low complex post-traumatic stress disorder/post-traumatic stress disorder (C/PTSD) symptoms.

experiencing adverse COVID-19 events, although most associations were not significant. In Victoria, the state most impacted by COVID-19 restrictions, participants who had been physically ill for any reason were significantly more likely to report C-PTSD/PTSD symptoms. Higher self-reported levels of C-PTSD/PTSD symptoms was significantly associated with

both holding a Health Care Card and increased experiences of racism, overall and in South Australia specifically. These results build on previous evidence of the socioeconomic and emotional consequences of COVID-19 for First Nations peoples, including findings that report a reduction in wellbeing (Gall et al. 2022). It also supports previous research



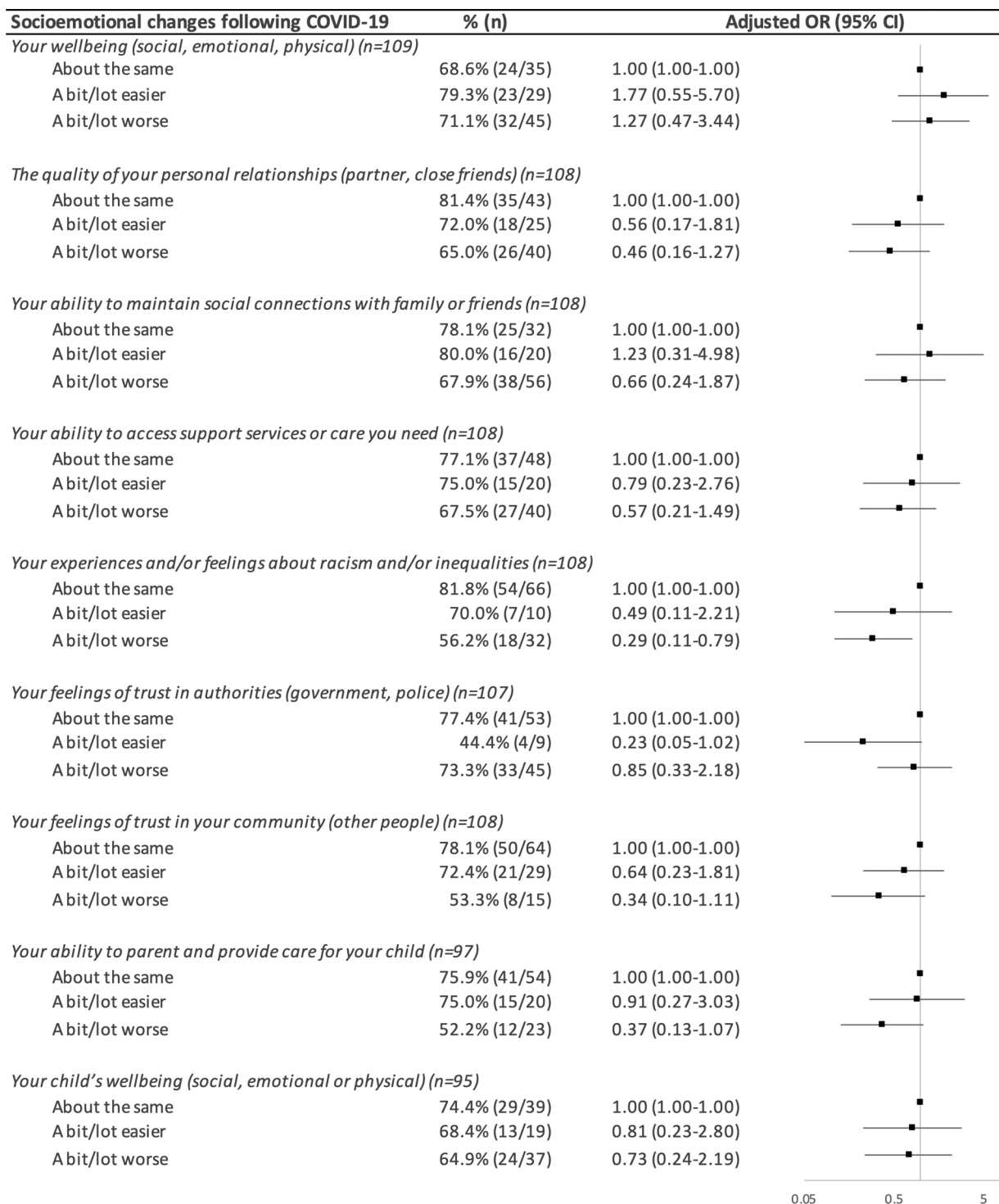


Figure 4: Relation of perceived socioemotional changes following COVID-19 to no/low self-reported complex post-traumatic stress disorder/post-traumatic stress disorder (C/PTSD) symptoms.



showing associations between racism and poverty and poorer mental health ([Thurber et al. 2021b](#); [Kairuz et al. 2021](#)).

While not a prevalence study, more than a quarter of parents reported symptom levels meeting the criteria for PTSD or C-PTSD. This was higher than conservatively estimated for the broader HPNF study (20%) ([Chamberlain et al. 2019](#)) based on previous studies reporting a wide range of prevalences of PTSD and C-PTSD in different populations: pre-natal clinical/subclinical PTSD of 17%; postpartum PTSD of 4–5% in women (up to 19–24% in high-risk groups); PTSD symptoms in more than 40–50% among Aboriginal and Torres Strait Islander people ([Wenz-Gross et al. 2016](#); [Yildiz et al. 2017](#); [Atkinson 2008](#); [Gee 2016](#); [Muzik et al. 2016](#)).

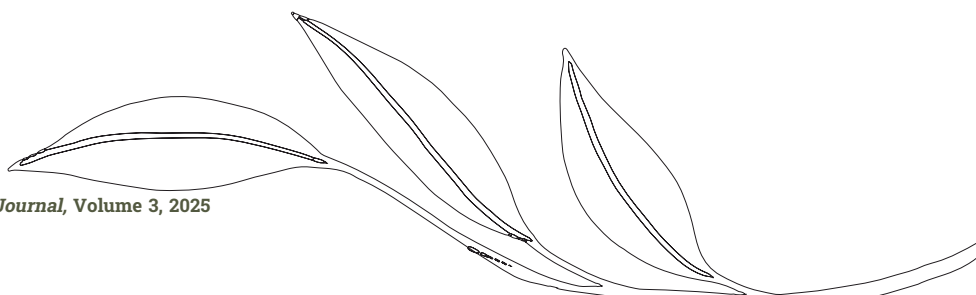
Given the role of COVID-19 as a stressor ([Bridgland et al. 2021](#)) and the impacts on mental health and wellbeing ([Australian Institute of Health and Welfare 2021](#)), it would be expected that some First Nations peoples would have experienced C-PTSD/PTSD symptoms over this period. However, the relationship between C/PTSD symptoms and COVID-19 specifically in this cross-sectional study is unclear. This may reflect the ‘point-in-time’ data collection, which mostly occurred prior to the large ‘Omicron waves’ and before many experienced the effects of multiple protracted lockdowns in Victoria. The cumulative exposure to pandemic adversities has been associated with increased trauma symptoms ([Stone et al. 2021](#)). Thus, there may have been a higher prevalence of self-reported symptoms or a stronger relationship to COVID-19 experiences at a later stage of the pandemic.

In most cases, parents who felt their current life situation had changed compared with before COVID-

19 (in terms of either easier or worse access to services, relationships and other socioemotional factors) did not have significantly different levels of symptoms compared with those who felt that their situation was about the same. This may indicate that the impact of COVID-19 did not change peoples’ life circumstances enough to increase the likelihood of self-reported trauma symptoms. It may also indicate that existing challenges before and after COVID-19 played a stronger role than COVID-19 itself.

State restrictions on social movement likely impacted wellbeing, as First Nations peoples were unable to maintain connections with community, Country and culture. Parents who felt that it had been easier to maintain social connections and had better wellbeing were more likely (while not significantly) to have no/low levels of symptoms. Further, those were more likely (not significantly) to have no/low symptoms if they had not been prevented from attending the funeral of a loved one. That is, the process of participating in the cultural practice of mourning was associated with a trend towards lower levels of trauma symptoms, despite the surrounding experience of grief and loss.

The finding that those who had worsening experiences of racism were more likely to have higher levels of trauma symptoms supports other First Nations research on the damaging impacts of racism and discrimination on health and wellbeing ([Thurber et al. 2021b](#); [Yashadhana et al. 2020](#)). The worsening experiences of racism also reflect recognised fear responses in public health emergencies, whereby people who are feeling under threat respond negatively to people from outside their community ([Graham et al. 2022](#); [Heris et al. 2022](#)).



Implications for public health

There is a movement in psychiatry and other health services toward 'trauma-informed care', which involves incorporating into practice an understanding that many people interacting with health systems will have experienced trauma. Trauma-informed care aims to create a supportive, trusting and 'safe' environment that avoids re-traumatising people (Isobel 2021). Principles of trauma-informed care include safety, choice, collaboration, trustworthiness and empowerment, not only at the individual level, but at the community or population level. This approach ensures that public health emergency responses do not inadvertently (re)traumatise the public. Trauma-informed care was adopted by the United States' Centers for Disease Control and Prevention (CDC), providing trauma-informed care training as part of pandemic preparedness (Wolkin and Everett 2018). A specific trauma-informed public health emergency response framework for First Nations communities has been proposed in Australia (Graham et al. 2022). This model includes the core trauma-informed care principles, as well as additional components of: an overarching philosophy of 'cultural humility, safety and responsiveness'; key enablers (local leadership and Eldership); supporting strategies (provision of basic needs and resources, well-functioning social systems, human rights, dignity, choice, justice and ethics, mutuality and collective responsibility, and strengthening of existing systems); interdependent core concepts (safety, transparency and empowerment, holistic support, connectedness and collaboration, and compassion, protection and caring); and central goals (a sense of security, resilience, wellbeing, self- and collective-efficacy, hope, trust, resilience, and healing from grief and loss) (Graham et al. 2022).

The high levels of trauma reported by the parents in this study support the application of this framework in future public health emergencies to protect against (re)traumatising First Nations communities. Cultural safety is one core concept from this framework that must be prioritised. Cultural safety is an Aboriginal and Torres Strait Islander specific concept that responds to the systemic, institutional conditions and power relations that shape individual experiences (Mohamed et al. 2024). Only Aboriginal and Torres Strait Islander peoples can determine whether they have or have not experienced cultural safety (Mohamed et al. 2024). A culturally safe environment includes one where Aboriginal and Torres Strait Islander peoples' experiences are believed and validated, cultures are centred and valued, they feel welcomed and respected, they see other Aboriginal and Torres Strait Islander peoples working in positions of power and they do not experience any form of racism (Mohamed et al. 2024). Cultural safety cannot exist in contexts where racism is experienced (Mohamed et al. 2024). The strong association observed in this study between worsening racism and inequality due to COVID-19 and higher levels of trauma symptoms is important evidence, suggesting that agencies must ensure that control measures do not cause psychological harms through over-policing and targeting of communities, repeating past experiences for First Nations communities (Furlong et al. 2025).

A further aspect of this framework supported by this study is the provision of basic needs, given that parents holding a Health Care Card were more likely to report trauma symptoms. The temporary increases in government support may have buffered increased financial stress and reduced existing financial stress for those experiencing social disadvantage, potentially



supporting greater resilience against the acute stress of COVID-19 experiences.

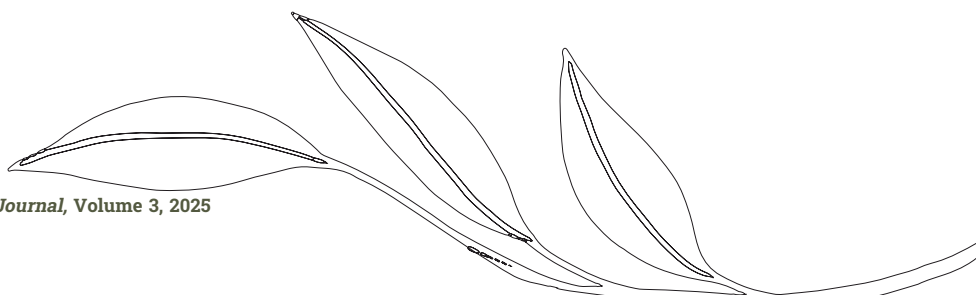
Public health officials must work with First Nations community leaders to balance the need to meet cultural obligations while protecting against transmission of disease to vulnerable populations, including Elders and pregnant women ([Australian Government Department of Health 2020](#); [Furlong et al. 2025](#)). Important cultural events often require quick interstate travel. The impact of restricted travel was evident in the related study ([Kennedy et al. 2022](#)). The present study found a non-significant increase in the odds of trauma symptoms among those prevented from attending a funeral; this was supported in qualitative analysis of data from the same participants, who described how this disruption to cultural practice and disconnection from their families, communities and Country adversely impacted their wellbeing ([Kennedy et al. 2022](#)). It also supports qualitative findings from other work conducted with Aboriginal Elders on the impact of COVID-19 on wellbeing ([Furlong et al. 2025](#)).

Strengths and limitations

This study had several strengths. It was a First Nations-led study as part of larger project to develop a culturally-responsive, trauma-informed, public health emergency framework for First Nations peoples, under the broader HPNF program of work developing trauma-informed care for First Nations parents. This provides a genuine, point-in-time contextual perspective of COVID-19 experiences and how this relates to complex trauma symptoms. It minimised research burden by incorporating key COVID-specific questions into the existing survey of Aboriginal and Torres Strait Islander parents regarding complex trauma. Importantly, it explored how exposure to COVID-19 and related

pandemic control experiences might trigger distress, to support the rationale for trauma-informed public health responses and is framed describing the impacts of colonisation and racism. It took a strengths-based approach in focusing on the outcome of low levels or no levels of psychological distress and the exposures of interest were framed as the absence of negative events. It included questions around social and cultural connectedness including the pandemic's impact on the ability to participate in cultural practices (such as Sorry Business).

However, there were several limitations that must be noted. Firstly, the outcome measure of C-PTSD/PTSD symptoms was calculated using the International Trauma Questionnaire, which is not specifically designed for use with First Nations peoples in Australia. Psychological constructs are based in cultural contexts, including complex trauma, where symptoms are rooted in compounding experiences within complex environments ([Gee et al. 2024](#)). Tools that are not responsive to these contexts, both in relation to the strength and resilience of First Nations peoples and the experiences of discrimination and trauma across multiple generations, risk misclassification and inadequate care ([Gee et al. 2024](#); [Sharma et al. 2024](#)). An adapted, culturally appropriate and validated tool, the Aboriginal Complex Trauma and Strengths Questionnaire (ASTSQ), has been developed as part of the HPNF study ([Gee et al. 2024](#)). Further, this cross-sectional study measures symptom levels at a single timepoint, without accounting for existing baseline trauma symptom levels prior to the pandemic. The cross-sectional nature of the study only permits the analysis of associations; causation by COVID-19 events cannot be inferred. The small sample sizes ($n = 30$ with the outcome of interest) likely impacted capacity to detect significant associations. The vastly different





experiences of the pandemic between jurisdictions may have also diluted any effects. Finally, the data on COVID-19 experiences were collected over a long period when some events that may have initially been distressing might have become routine (e.g. testing, isolating, testing positive to COVID-19). This likely further weakened the power to detect potential associations between events and the outcome. Additionally, the challenges of recruitment during COVID-19 meant that data collection occurred over a wide period. Consequently, some participants were being asked to recall and compare their life circumstances more than two years prior.

Conclusions

These findings highlight the importance of implementing trauma-informed public health emergency responses during a pandemic. Financial stress, racism and inequality were associated with increased trauma symptoms. Parents who had fewer disruptions to cultural practices were more likely to be resilient to the stressors of the pandemic. The findings reinforce the need for the proposed culturally-responsive, trauma-informed public health emergency framework for First Nations communities.

Author contributions

C. Chamberlain led the study, with stewardship provided by C. Chamberlain, C. Heris, S. Graham, M. Kennedy, and supervision by C. Chamberlain and C. Heris. The study was conceived by C. Chamberlain, S. Bennetts, C. Heris, T. Glover. Data curation by C. Heris, T. Bright, S. Bennetts, C. Chamberlain. Formal analysis and visualisation by C. Heris, findings validated by all authors. Investigation: all authors. Methodology: all authors. T. Glover and C. Heris wrote the original draft (first draft submitted for T. Glover's

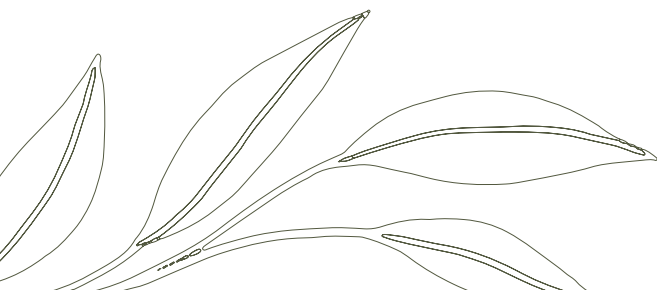
medical school training) and all authors contributed to, reviewed and approved the final manuscript. Funding acquired by C. Chamberlain, S. Graham, M. Kennedy, C. Atkinson, C. Heris, S. Bennetts. Project administration by C. Chamberlain and C. Heris.

Declaration of interests

The authors acknowledge C. Chamberlain, M. Kennedy and S. Graham are members of the First Nations Health and Wellbeing – The Lowitja Journal editorial board and declare there are no competing interests in the publication of this manuscript.

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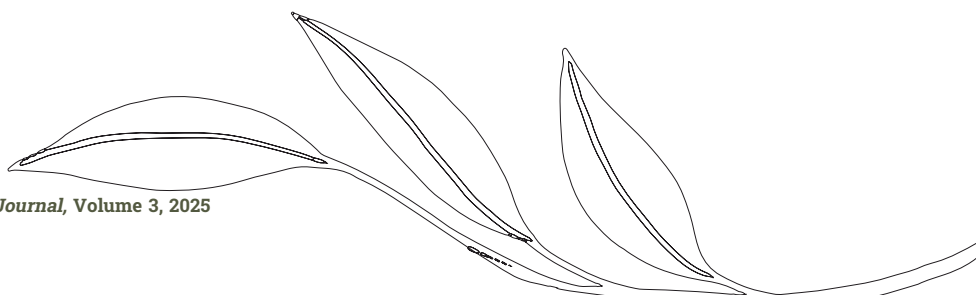
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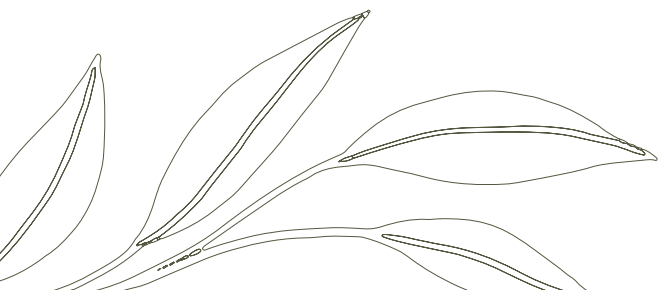
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Supplementary material

Supplementary material associated with this article can be found in the online version at <https://doi.org/10.1016/j.fnhli.2025.100086>.

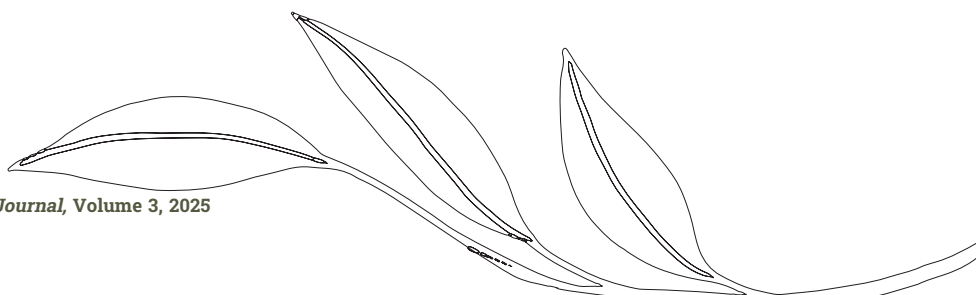
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