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Associations between ongoing COVID-19 lockdown and the financial and mental health experiences of Australian families

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Abstract

In 2020, Australia's successful COVID-19 public health restrictions comprised a national “initial lockdown” (March–May) and “ongoing lockdown” (July–November) for metropolitan Victorian residents only. We evaluated associations between ongoing lockdown and family finances and mental health. In the June and September 2020 Royal Children's Hospital National Child Health Polls, caregivers of children in Victoria and New South Wales (NSW) reported the following: job/income loss; material deprivation (inability to pay for essential items); income poverty; mental health (Kessler-6); perceived impact on caregiver/child mental health; and caregiver/child coping. Data from caregivers ($N = 1207/902$) in June/September were analysed using difference-in-difference modelling (NSW provided the comparator). During Victoria's ongoing lockdown, job/income loss increased by 11% (95%CI: 3%–18%); Kessler-6 poor mental health by 6% (95%CI: −0.3%–12%) and perceived negative mental health impacts by 14% for caregivers (95%CI: 6%–23%) and 12% for children (95%CI: 4%–20%). Female (vs. male) caregivers, metropolitan (vs. regional/rural) families, and families with elementary school-aged children (vs. pre-/high-school) were the most affected. The ongoing lockdown was associated with negative experiences

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of mental health, employment and income, but not deprivation or poverty, likely because of government income supplements introduced early in the pandemic. Future lockdowns require planned responses to outbreaks and evidence-informed financial and mental health supports.

KEYWORDS

COVID-19, lockdown, mental health, parenting, poverty

1 | INTRODUCTION

The coronavirus SARS-COV-2 (COVID-19) was first identified in Australia in late January 2020. From March, Australian governments at the federal and state levels implemented a range of public health restrictions, including stay-at-home orders (also known as “lockdown”). In 2020, Australia's lockdown response was among the most stringent internationally (Hale et al., 2021). By 31 December, the measures successfully contained infection to an overall incidence rate of 111 cases and 3.5 deaths per 100,000 people (World Health Organization, 2020). By contrast, other high-income countries with more lenient public health restrictions, such as the United States (US) and the United Kingdom (UK), recorded rates of 5895 and 3730 cases per 100,000 people, respectively (World Health Organization, 2020). Studies of previous pandemics and from the first months of COVID-19 showed that quarantine and isolation could have indirect and negative impacts on household finances and mental health (Brooks et al., 2020; Galea et al., 2020; Gibbs et al., 2019; Goldfeld et al., 2022; Loades et al., 2020; Nearchou et al., 2020; Racine et al., 2020; Russell et al., 2020). This is particularly the case for families with children, where there are mixed views on the balance of harms versus benefits of lockdown (Dorn et al., 2020; Evans et al., 2020; Gibbs et al., 2019; Goldfeld et al., 2022; Suleman et al., 2020). Unlike many high-income countries, Australia's low incidence of COVID-19 in 2020 made it possible to examine the effects of lockdown mostly independent of the compounding disease impacts, which forms the purpose of this paper.

The evolution of Australia's COVID-19 public health restrictions is presented in Figure S1. From 23 March to 1 June 2020, the national “initial” lockdown included mandatory quarantine for returned travellers; travel bans; self-isolation for suspected/confirmed cases; stay-at-home orders; and closure of schools and “non-essential” businesses (Australian Government, 2020; Department of Health and Human Services, 2020; Goldfeld et al., 2022). Five weeks after the initial lockdown eased, a second wave of infections in the state of Victoria rapidly surpassed active cases in the first wave, with the national peak reaching 721 new cases (2.8 per 100,000) in 24 h. From 8 July to 23 November 2020, Victorian residents entered an “ongoing” and more severe lockdown. The public health measures were strictest for metropolitan areas (in the state's capital city of Melbourne) compared with regional and rural Victoria. Previous lockdown measures were reinstated, the stay-at-home orders were further restricted, a night-time curfew was added, and early childhood education and care providers closed (see Figure S1). Compliance with Australia's lockdown measures was driven by state enforcement, through police surveillance and fines.

To protect against the economic fallout of lockdown, the Australian federal government rapidly implemented a suite of short-term financial supports (Cassells & Duncan, 2020; Phillips et al., 2020). As shown in Figure S1, they included an unemployment supplement (“JobSeeker”) which doubled recipients' social welfare benefits from \$550 to \$1100 a fortnight; (Phillips et al., 2020) a wage supplement for eligible businesses to retain their workforce (“JobKeeper”; Cassells & Duncan, 2020) allowing early access to superannuation; (Gandy, 1996) and free childcare for working families (Klapdor, 2020). Banks and creditors also allowed loan repayments to be deferred for up to 10 months. These social policy changes represent some of the largest (albeit temporary) in Australia's history.

Indeed, the JobKeeper and JobSeeker supplements were so significant that, by September 2020, levels of poverty and housing stress in Australia were substantially lower than the levels directly preceding COVID-19 (Phillips et al., 2020).

While these social policies buffered Australians from poverty, global data on COVID-19 show that lockdown has substantial and negative indirect impacts on households. In a review of the global mental health evidence from the first year (to April 2021) Akinin et al. (2021), reported a peak in adults' psychological distress in the early months. While many studies reported a decline to pre-pandemic levels by mid-2020 (Akinin et al., 2021), the authors found that mental health inequities were sustained or exacerbated for adults who were younger, female, child-rearing or with fewer socioeconomic resources (Akinin et al., 2021; Centre for Mental Health, 2021). This is supported by Australian cross-sectional data of 1200 adults repeated weekly from March 2020, which found that mental distress tripled for parents from 8% pre-COVID-19 to 24% during the pandemic (Broadway et al., 2020). The same survey data showed similar patterns for self-reported financial stress and material deprivation (unable to afford essential items; Broadway et al., 2020). The latter aligns with the notion of the pandemic being syndemic, that is, synergistically acting with current inequities to exacerbate the negative impacts of social demographics including indicators of adversity (Shen et al., 2020).

While the infection and mortality rates of the original COVID-19 strains were lower in children than in adults (Bruining et al., 2020; Shen et al., 2020), children are more developmentally vulnerable to their socioeconomic environment than adults (Duncan et al., 2010; Goldfeld et al., 2018). In Racine et al., 2021 meta-analysis of 29 studies published in the first year of the pandemic, prevalence estimates for depression and anxiety in children doubled. Previous studies show that the stress and isolation of lockdown can negatively impact children's mental health for many months (Loades et al., 2020), and school closures can compromise children's educational opportunities for years (Dorn et al., 2020; Gibbs et al., 2019).

To our knowledge, no studies have investigated associations between COVID-19 lockdown and both the financial and mental health experiences of families with children, in the relative absence of disease morbidity and mortality. This evidence can provide insights into the potential impacts of lockdown to help inform economic and population health responses to future public health crises. This study uses the natural experiment that occurred in Australia, whereby the state of Victoria experienced ongoing and more severe lockdown, to address this evidence gap. Data are drawn from the Royal Children's Hospital (RCH) National Child Health Poll, the only nationally representative survey to measure families' and children's experience of the COVID-19 pandemic. The poll was conducted in June (when the initial lockdown had ended for all Australians) and in September 2020 (when only metropolitan Victorians were in ongoing, stricter lockdown). Data from the neighbouring state of NSW, which experienced only the initial lockdown, provide the comparator. The two states are inherently similar in terms of their population, size and geographic location.

The specific aims were to (1) describe families' financial and mental health experiences after the initial lockdown and (2) evaluate associations between the ongoing lockdown and family finances and mental health (a) overall and (b) by caregiver gender, child age and geographical location. We hypothesised that the ongoing lockdown would be associated with increased financial hardship and worse mental health.

2 | METHODS

2.1 | Design and procedure

The RCH National Child Health Poll comprises periodic cross-sectional surveys of approximately 2000 Australian caregivers of children aged 0–17 years. Data collection is contracted to the Online Research Unit who obtain written informed consent and draw a nationally representative sample of

caregivers using stratified random sampling from their panel of over 350,000 adults aged 18 years or older, who live in Australia and have internet access. Panel members have a unique identifying number, which means they can only access and complete the poll once. Only one person per household can join the panel. The field period for each poll is approximately 2 weeks. Surveys are administered in sixth-grade-equivalent English, which corresponds to the end of elementary school (known as primary school in Australia). Responses are anonymous, and respondents are remunerated with points exchangeable for department store gift vouchers. Surveys reported in this paper were conducted during 15–23 June and 15–29 September 2020 with two different samples. They focussed on families' experience of financial hardship and mental health 3 and 6 months into the COVID-19 pandemic. The RCH Human Research Ethics Committee approved the research (February 2020, #35254).

2.2 | Patient and public involvement

Royal Children's Hospital Polls are informed by previous surveys, which ask caregivers to identify the child health issues of most concern to them and which child health topics should be included in future polls. At the end of each survey, participants were informed of the study Website where all research reports are accessible to the public. As each survey is collected from a cross-sectional, population-based online survey of a random sample, respondents were not directly involved in the recruitment or conduct of the study.

2.3 | Measures

Both polls analysed in this study captured demographic information including caregiver and child age and gender, number of children in care, caring for a child with additional health needs (chronic illness, health condition and disability), partner status, Health Care Card status (identifies low income), caregiver education level, identifying as Aboriginal or Torres Strait Islander, country of birth, language spoken at home, living in metropolitan/regional/rural areas and postcode.

Family finances were assessed using

1. Nine items adapted from the CoRonavIruS Health Impact Survey (CRISIS) caregiver version (Nikolaidis et al., 2021): "What changes in employment or income have occurred in your household due to coronavirus/COVID-19?" (response options "yes" vs. "no") including "job loss by one caregiver"; "job loss by two caregivers"; "difficulty paying bills or for necessities"; "working longer hours" and "filing for unemployment"; "applying for Government assistance"; "reduced work hours"; "reduced total household income" or "none of the above." A binary variable describing any job loss (by one or two caregivers) or reduction in income due to COVID-19 (vs. not) was created to enable comparison with other Australian studies, for example (O'Connor et al., 2021).
2. Eight items adapted from the Household, Income and Labour Dynamics in Australia (HILDA) Survey Wave 18 Household Questionnaire Material Deprivation Module (Wilkins & Lass, 2018) asking "In the last month, because of money pressure did you miss or put off" (response options: "yes" vs. "no"): mortgage or rent repayments; electricity, gas and water bills; food; healthcare; prescription medicines; home or car insurance; mobile phone bills; and internet. Two summary variables were created: (a) a binary "any material deprivation" variable identifying inability to pay for one or more essential items (vs. "none") and (b) a "total material deprivation count" summing the number of essential items where payment was missed or put off (possible range 0–8).
3. Current total household income before tax, categorised into 10 options ranging from "less than \$500 p/week" to "more than \$3000 p/week" plus "prefer not to say." A binary variable was created to summarise low income ("less than AU\$1000 p/week" vs. more) based on Australian thresholds for Health Care Card eligibility and definitions of income poverty (Davidson et al., 2020).

Mental health was assessed using:

4. Six items of the Kessler-6 (K6) assessing caregivers' self-reported anxiety and depressive symptoms encountered in the last 4 weeks. Scored on a 5-point Likert scale from 1 "none of the time" to 5 "all of the time." Summarised into (a) a continuous total score and (b) a binary variable using the established cut-point for the Australian population identifying "poor mental health" (total score 19 or more) versus not (total score 6–18; Furukawa et al., 2003).
5. A 5-point item adapted from UK Young Minds Matter (Young Minds, 2020) asking "What would you say the impact of COVID-19 has been on your mental health/the mental health of your child?" dichotomised into perceived negative impacts ("small negative impact/large negative impact") versus perceived positive impacts ("no impact/small positive impact/large positive impact"). Reported by caregivers for (a) themselves and (b) each child.
6. A 4-point study-designed item asking "Which of the following best describes how you are/your child is managing with life at the moment?" reported by caregivers and dichotomised into "struggling/not coping" versus "coping/thriving." Reported by caregivers for (a) themselves and (b) each child.

2.4 | Analysis preparation

Families living in the Australian states of Victoria and NSW were retained in the analytic sample. For each family, we assigned data from the Australian Bureau of Statistics (ABS) Socio-Economic Indexes for Areas (SEIFA) Index of Relative Disadvantage, a national area-level index derived from census data for all individuals living in a postcode, with higher scores indicating greater advantage. Forty-one families (with 63 children) preferred not to report their country of birth, and one family (with two children) was missing SEIFA (see Figure S2). As country of birth and SEIFA were included as potential confounding variables (controls), the records with missing data were dropped by the regression analyses. Thus, to accurately represent the analytic sample, the small number of records with missing data (2%) was also excluded from the descriptive analyses. Measures were weighted to reduce the effects of nonresponse and noncoverage and therefore approximate the population distributions of financial and mental health experiences. Weights were derived using the ABS 2016 Census of Population and Housing, Customised Data Report, according to distributions of caregiver age, gender, family structure (sole caregiving, number of children and any under 5 years), state/territory and SEIFA.

2.5 | Analysis

Demographics were described by survey and state using unweighted data. Family finances and mental health experiences (Aim 1) were described by survey and state using weighted proportions for categorical data and mean and standard deviation (SD) for continuous data. The change in family finances and mental health as related to lockdown (Aim 2a) was estimated using difference-in-difference analyses implemented as an interaction term between time (September vs. June) and treatment group dummy variables (Victoria vs. NSW) using linear regression models. The difference-in-difference approach is appropriate given the aim and the policy set-up. The ongoing lockdown was introduced only for Victoria, and not for NSW. This created a natural experiment that allowed comparison of a group of families who were exposed to the ongoing lockdown (Victoria) with an unexposed group (NSW). The difference-in-difference estimator compares families' outcomes before and after the policy implementation.

Given the early evidence showing the differential impacts of the pandemic according to family and socioeconomic characteristics (Aknin et al., 2021; Broadway et al., 2020; Centre for Mental

Health, 2021), the difference-in-difference models controlled for demographic variables that were available in the dataset and likely to confound the association between lockdown and outcomes. These included child and caregiver age and gender (male/female); number of children; child with additional health needs (vs. not); one-caregiver family (vs. not); owns a Health Care Card (vs. not); caregiver education (<Year 10/Year 10/Year 12/trade or apprenticeship/certificate or diploma/undergraduate/postgraduate); Aboriginal or Torres Strait Islander (vs. not); caregiver born outside Australia (vs. in Australia); home language other than English (vs. speaks English at home); lives regionally or rurally (vs. metropolitan); and SEIFA quintile. Caregiver mental health (total K6 score) was included as a control in the regressions for child mental health. All child models included family clustered errors to account for the correlation that exists at this level. These models were repeated for three subgroups (Aim 2b): (a) caregiver gender (female/male); (b) child age (grouped at 0–4 years (as a proxy for preschool), 5–11 years (a proxy for elementary/primary school) and 12–17 years (a proxy for secondary/high school)); (c) and metropolitan/regional/rural location. The latter was used as a proxy for the severity of lockdown, noting not only that metropolitan Victorians endured a more severe and longer lockdown than their regional and rural counterparts but also that the whole state was affected. Subgroup models controlled for the same variables except the grouping variable, which provided the strata for analysis.

We chose to run linear regression models as interpretation is simpler than logistic regression and most of the predicted y -values were bounded within 0–1. To check the robustness of these models, we ran marginal effects probit models for the dichotomous outcomes for the whole sample (not presented), which confirmed the linear regression output. As 293 caregivers preferred not to disclose their income, these analyses should be interpreted with caution. Data were analysed with Stata v17.

3 | RESULTS

3.1 | Sample characteristics

Figure S2 presents the respondent flowchart for the analytic sample. In June, after the initial lockdown ended, 2697 Australian caregivers were invited and 2020 (75%) completed the poll. Of these, the 1207 families with 1992 children who lived in Victoria (604 caregivers/985 children) or NSW (603 caregivers/1008 children) were included in the analysis. In September, during Victoria's ongoing lockdown, 1769 caregivers were invited and 1434 (81%) completed the poll. Of these, the 902 families with 1584 children who lived in Victoria (460 caregivers/786 children) or NSW (442 caregivers/798 children) were included in the analysis. Table 1 describes the demographic characteristics by survey and state. The SEIFA quintiles suggested strong response bias towards more socioeconomically advantaged groups. There were some differences between surveys in characteristics such as the proportion of respondents caring for young children, caregiver gender, sole caregiving and SEIFA: characteristics that were used to create the sample weights and analytic controls (see Analysis).

3.2 | Experiences after the initial lockdown (Aim 1)

Table 2 describes families' financial and mental health experiences in June 2020. Table 3 presents the mean differences (MDs) between NSW and Victoria ("Vic June" column; see footnote for controls). Twenty-nine per cent of NSW caregivers reported job or income loss due to the COVID-19 pandemic, compared with 24% of Victorians (MD = 5%; 95% CI: 0.1%–10%). Tables 2 and 3 show that financial and mental health experiences were otherwise similar between states. Fifteen per cent of families reported low income, and one-third reported material deprivation (unable to pay for essential items including mortgage or rent; electricity, gas and water bills; food; healthcare; prescription medicines; home or car insurance; mobile phone bills; and internet). Caregivers averaged one missed payment

TABLE 1 Demographic characteristics (unweighted) of New South Wales (NSW) and Victorian families surveyed after the initial lockdown (June 2020) and during Victoria's ongoing lockdown (September 2020) in proportions unless specified.

Demographic characteristics	New South Wales		Victoria	
	June	September	June	September
Caregiver	<i>N</i> = 603	<i>N</i> = 442	<i>N</i> = 604	<i>N</i> = 460
Age (years), mean (SD)	44.4 (9.3)	41.4 (7.8)	43.9 (9.1)	42.2 (8.3)
Number of children in care, mean (SD)	1.7 (0.7)	1.8 (0.8)	1.6 (0.8)	1.7 (0.8)
Female	47.3	52.3	55.4	52.3
One-parent family	25.2	20.6	22.2	17.6
Caregiver to child with additional health needs ^a	40.3	48.2	39.2	44.1
Health care card (identifies low income)	14.8	21.7	14.1	17.8
Education				
Less than Year 10	1.2	1.4	0.8	1.7
Year 10	5.5	5.7	3.2	2.6
Year 12	8.6	8.8	12.8	12.6
Trade/apprenticeship	3.8	5.7	2.5	2.8
Certificate/diploma	19.4	22.6	21.7	18.5
Undergraduate	38.5	32.6	37.6	41.5
Postgraduate	23.1	23.3	21.5	20.2
Aboriginal or Torres Strait Islander	2.8	5.2	1.5	4.6
Born in Australia	27.4	21.5	26.7	22.8
Home language other than English	23.2	29.0	23.2	23.0
Lives regionally or rurally (vs. metropolitan)	12.1	11.8	15.7	11.5
SEIFA index of social disadvantage quintile				
1 (most disadvantage)	11.0	13.1	8.3	10.7
2	15.1	18.8	16.2	19.4
3	17.4	20.8	17.4	15.9
4	16.3	13.1	23.7	23.7
5 (least disadvantage)	40.3	34.2	34.4	30.4
Child	<i>N</i> = 1008	<i>N</i> = 798	<i>N</i> = 984	<i>N</i> = 786
Age (years), mean (SD)	10.2 (4.9)	9.1 (4.7)	9.9 (5.0)	9.5 (4.9)
Female	48.7	49.4	49.0	49.4

Abbreviations: CI, 95% confidence interval; SEIFA, socio-economic indexes for areas.

^aExamples of additional health needs include asthma, epilepsy and diabetes; examples of disability include hearing impairment, intellectual disability and autism.

out of the eight essential items. One in five caregivers reported poor mental health according to the K6; half said the pandemic had negative impacts on their mental health; and one quarter said it had negative impacts on their child's mental health. Despite these negative experiences, most caregivers and children reported coping.

3.3 | The experiences of the ongoing lockdown (Aim 2)

Table 3 presents the difference-in-difference analyses testing associations between the ongoing lockdown and families' finances and mental health, for the cohorts overall and by subgroups. To enable interpretation, Figure 1 graphs the binary variables. Over the June–September 2020 period,

TABLE 2 Financial and mental health experiences (weighted) of New South Wales (NSW) and Victorian families surveyed after the initial lockdown (June 2020) and during Victoria's ongoing lockdown (September 2020) in proportions (95% confidence intervals) unless specified.

Financial and mental health experiences	New South Wales		Victoria	
	June	September	June	September
Financial				
Job or income loss due to COVID-19 ^a	29.3 (24.0–35.2)	25.8 (20.9–31.5)	24.1 (19.3–30.0)	34.8 (28.7–41.4)
Any material deprivation: unable to pay for essential items ^b	32.2 (26.8–38.1)	31.8 (26.2–37.9)	30.4 (25.3–36.1)	27.0 (21.5–33.2)
Total material deprivation count, ^b mean (CI)	1.1 (0.9–1.4)	1.3 (1.0–1.7)	1.2 (0.9–1.5)	1.0 (0.7–1.2)
Low household income (<AU\$1000 p/week) ^c	15.1 (10.7–21.0)	21.6 (16.3–28.1)	15.7 (11.7–20.7)	22.4 (16.7–29.3)
Caregiver				
Mental health score (K6 total), mean (CI)	13.0 (12.3–13.8)	13.2 (12.3–14.0)	12.9 (12.3–13.6)	13.7 (12.9–14.5)
Poor mental health (K6 cut-point) ^d	21.6 (16.4–27.9)	17.6 (13.0–23.5)	17.6 (13.3–22.9)	22.9 (17.6–29.3)
Perceived negative impact of COVID-19 on mental health	49.9 (44.0–55.9)	49.0 (42.9–54.5)	48.7 (42.9–54.5)	57.8 (51.4–63.9)
Struggling or not coping ^e	12.0 (8.7–16.3)	16.6 (12.3–22.1)	13.7 (9.9–18.6)	19.0 (14.6–24.5)
Child				
Perceived negative impact of COVID-19 on mental health	26.3 (21.7–31.6)	34.5 (29.0–40.5)	24.0 (20.0–28.4)	43.2 (37.2–49.3)
Struggling or not coping ^e	10.6 (6.9–16.0)	13.5 (9.9–18.2)	7.8 (5.1–11.9)	13.1 (9.7–17.3)

Note: Data were weighted using national demographic distributions for caregiver age, gender, family structure (sole caregiving, number of children and any under 5 years), state/territory and SEIFA.

Abbreviations: K6, Kessler-6; SEIFA, Socio-Economic Indexes for Areas Index of Relative Disadvantage.

^aJob loss by one or two adults, or reduction in income, due to COVID-19.

^bAny one or more of mortgage or rent; electricity, gas and water bills; food; healthcare; prescription medicines; home or car insurance; mobile phone bills; and internet.

^cMissing 293 caregivers who preferred not to report income.

^dK6 dichotomised into a binary “poor mental health” (total score 19 or more) versus not (total score 6–18).

^eVersus “coping/thriving” categories.

relative to their NSW counterparts, Victorians reported an 11% increase in job or income loss (95% CI: 3%–18%). There was no evidence that the ongoing lockdown was related to a change in material deprivation or the proportion of households reporting low income. The ongoing lockdown was associated with a mean 0.83 increase (95% CI: –0.08%–1.74%) in K6 total score and 6% increase (95% CI: –0.3%–12%) in the binary K6 measure of poor mental health. Perceived negative mental health impacts of the pandemic were also associated with the ongoing lockdown, reported by 14% (95% CI: 6%–23%) more Victorian caregivers for themselves and for 12% (95% CI: 4%–20%) more Victorian children relative to NSW.

When considering the subgroups, the evidence for associations between ongoing lockdown, job/income loss and caregiver mental health was strongest for female caregivers, caregivers of 5–11-year-old children and caregivers living in metropolitan areas. Notably, Table 3 (“NSW September” column) shows that the differences between the initial and ongoing lockdowns in measures of job/income loss and K6 mental health were in part due to worsening outcomes for Victorians as well as improving outcomes for NSW families. The proportion of NSW caregivers reporting job/income loss decreased by 6% (95% CI: 0.2%–11%) from June to September. The same reduction was evident in the poor mental health (K6) of female caregivers (mean difference = 6%, 95% CI: 0.3%–12%). There was evidence that the ongoing lockdown was related to caregivers' perception of the pandemic having negative impacts on their children's mental health, for all subgroups except for families living in

TABLE 3 Difference-in-difference linear regression models estimating associations between the ongoing lockdown and families' finances and mental health for the total sample and by subgroups, using New South Wales (NSW) families in June 2020 as reference group.

Pandemic experiences	Subgroup	Group category	N	Mean difference (95% confidence interval)		
				Vic ongoing lockdown effect	Vic June	NSW September
Financial	Total sample	All	2109	0.11 (0.03; 0.18)*	-0.05 (-0.10; -0.001)*	-0.06 (-0.11; -0.002)*
	1. Caregiver gender	Female	1084	0.12 (0.01; 0.23)*	-0.06 (-0.13; 0.01)^	-0.06 (-0.14; 0.02)
		Male	1025	0.09 (-0.03; 0.20)	-0.03 (-0.11; 0.04)	-0.06 (-0.14; 0.02)
	2. Child age (years)	0-4	334	0.12 (-0.09; 0.32)	-0.11 (-0.25; 0.03)	-0.12 (-0.28; 0.04)
		5-11	800	0.14 (0.02; 0.27)*	-0.07 (-0.15; -0.01)^	-0.03 (-0.12; 0.05)
		12-17	975	0.08 (-0.03; 0.20)	0.02 (-0.09; 0.05)	-0.06 (-0.15; 0.02)
	3. Location	Metro	1836	0.12 (0.04; 0.21)*	-0.06 (-0.12; -0.005)*	-0.07 (-0.13; -0.01)*
		Regional	273	0.06 (-0.14; 0.27)	-0.02 (-0.14; 0.10)	0.03 (-0.12; 0.18)
	Total sample	All	2109	0.01 (-0.06; 0.08)	-0.04 (-0.08; 0.01)	-0.03 (-0.09; 0.02)
	1. Caregiver gender	Female	1084	0.04 (-0.07; 0.15)	-0.05 (-0.12; 0.02)	-0.06 (-0.13; 0.02)
		Male	1025	-0.02 (-0.12; 0.07)	-0.03 (-0.09; 0.04)	-0.02 (-0.09; 0.05)
	2. Child age (years)	0-4	334	-0.01 (-0.20; 0.18)	-0.08 (-0.21; 0.05)	-0.05 (-0.20; -0.10)
Any material deprivation: unable to pay for essential items ^b		5-11	800	-0.04 (-0.16; 0.08)	-0.01 (-0.09; 0.07)	0.02 (-0.06; 0.10)
		12-17	975	0.06 (-0.04; 0.16)	-0.06 (-0.12; 0.01)^	-0.08 (-0.16; -0.01)*
	3. Location	Metro	1836	0.01 (-0.07; 0.08)	-0.04 (-0.09; 0.01)	-0.04 (-0.10; 0.01)
		Regional	273	0.03 (-0.20; 0.25)	0.005 (-0.15; 0.15)	0.01 (-0.15; 0.18)
	Total sample	All	2109	-0.06 (-0.40; 0.28)	-0.06 (-0.27; 0.16)	0.02 (-0.27; 0.23)
	1. Caregiver gender	Female	1084	0.07 (-0.40; 0.53)	-0.07 (-0.39; 0.25)	-0.09 (-0.44; 0.26)
		Male	1025	-0.15 (-0.39; 0.21)	-0.09 (-0.39; 0.21)	-0.004 (-0.36; 0.35)
	2. Child age (years)	0-4	334	-0.43 (-1.42; 0.56)	0.22 (-0.43; 0.87)	0.28 (-0.45; 1.01)
		5-11	800	-0.21 (-0.79; 0.38)	-0.19 (-0.59; 0.22)	0.13 (-0.31; 0.56)
		12-17	975	0.20 (-0.24; 0.64)	-0.11 (-0.38; 0.16)	-0.25 (-0.57; 0.07)
	3. Location	Metro	1836	-0.06 (-0.43; 0.31)	-0.07 (-0.30; 0.17)	-0.01 (-0.28; 0.26)
		Regional	273	0.07 (-0.88; 1.02)	0.02 (-0.59; 0.64)	-0.11 (-0.86; 0.64)
Total material deprivation count, ^a mean (CI)						

(Continues)

TABLE 3 (Continued)

Pandemic experiences		Group category	N	Mean difference (95% confidence interval)		
Subgroup				Vic ongoing lockdown effect	Vic June	NSW September
Low household income (<AUS\$1000 p/week) ^c		All	1816	0.02 (−0.04; 0.08)	0.01 (−0.02; 0.05)	0.02 (−0.02; 0.06)
1. Caregiver gender	Female	Female	922	0.01 (−0.09; 0.10)	0.01 (−0.05; 0.07)	0.04 (−0.03; 0.10)
	Male	Male	894	0.02 (−0.06; 0.09)	0.02 (−0.02; 0.06)	0.03 (−0.02; 0.08)
2. Child age (years)	0–4	0–4	287	−0.02 (−0.19; 0.14)	0.04 (−0.07; 0.15)	0.08 (−0.03; 0.20)
	5–11	5–11	703	−0.02 (−0.11; 0.07)	−0.02 (−0.04; 0.08)	0.03 (−0.03; 0.09)
	12–17	12–17	826	0.06 (−0.03; 0.15)	0.002 (−0.05; 0.05)	−0.01 (−0.07; 0.05)
3. Location	Metro	Metro	1577	0.02 (−0.04; 0.08)	0.01 (−0.03; 0.05)	0.02 (−0.02; 0.06)
	Regional	Regional	239	−0.07 (−0.25; 0.12)	0.05 (−0.07; 0.18)	0.08 (−0.05; 0.22)
Caregiver		All	2109	0.83 (−0.08; 1.74) [^]	0.02 (−0.55; 0.58)	−0.13 (−0.78; 0.52)
Mental health score (K6 total), mean (CI)		Female	1084	1.85 (0.56; 3.13)*	−0.23 (−1.06; 0.61)	−0.76 (−1.65; 0.14) [^]
1. Caregiver gender	Male	Male	1025	−0.14 (−1.45; 1.16)	0.24 (−0.54; 1.01)	0.44 (−0.51; 1.39)
	0–4	0–4	334	0.47 (−1.98; 2.93)	−0.75 (−2.35; 0.85)	−0.47 (−2.39; 1.45)
2. Child age (years)	5–11	5–11	800	1.64 (0.19; 3.09)*	−0.37 (−1.33; 0.59)	−0.29 (−1.28; 0.71)
	12–17	12–17	975	0.41 (−0.96; 1.77)	0.54 (−0.24; 1.33)	0.11 (−0.86; 1.08)
3. Location	Metro	Metro	1836	0.68 (−0.31; 1.66)	0.03 (−0.59; 0.64)	0.03 (−0.68; 0.74)
	Regional	Regional	273	2.01 (−0.55; 4.57)	−0.02 (−1.55; 1.52)	−1.29 (−2.87; 0.30)
Total sample		All	2109	0.06 (−0.003; 0.12) [^]	−0.01 (−0.05; 0.03)	−0.02 (−0.06; 0.02)
1. Caregiver gender	Female	Female	1084	0.10 (0.02; 0.19)*	−0.02 (−0.07; 0.04)	−0.06 (−0.12; −0.003)*
	Male	Male	1025	0.02 (−0.07; 0.10)	−0.01 (−0.05; 0.04)	0.02 (−0.05; 0.08)
2. Child age (years)	0–4	0–4	334	0.06 (−0.11; 0.22)	−0.09 (−0.20; 0.02)	−0.06 (−0.19; 0.07)
	5–11	5–11	800	0.15 (0.05; 0.25)*	−0.05 (−0.12; 0.01)	−0.05 (−0.12; 0.02)
12–17	12–17	12–17	975	−0.01 (−0.10; 0.07)	0.05 (−0.001; 0.09)*	0.02 (−0.04; 0.08)
	Metro	Metro	1836	0.05 (−0.02; 0.11)	−0.01 (−0.05; 0.03)	−0.01 (−0.06; 0.04)
3. Location	Regional	Regional	273	0.15 (−0.01; 0.30) [^]	−0.01 (0.11; 0.08)	−0.10 (−0.20; −0.002)*
Poor mental health (K6 cut-point) ^d		All	2109	0.06 (−0.003; 0.12) [^]	−0.01 (−0.05; 0.03)	−0.02 (−0.06; 0.02)
1. Caregiver gender	Female	Female	1084	0.10 (0.02; 0.19)*	−0.02 (−0.07; 0.04)	−0.06 (−0.12; −0.003)*
	Male	Male	1025	0.02 (−0.07; 0.10)	−0.01 (−0.05; 0.04)	0.02 (−0.05; 0.08)
2. Child age (years)	0–4	0–4	334	0.06 (−0.11; 0.22)	−0.09 (−0.20; 0.02)	−0.06 (−0.19; 0.07)
	5–11	5–11	800	0.15 (0.05; 0.25)*	−0.05 (−0.12; 0.01)	−0.05 (−0.12; 0.02)
12–17	12–17	12–17	975	−0.01 (−0.10; 0.07)	0.05 (−0.001; 0.09)*	0.02 (−0.04; 0.08)
	Metro	Metro	1836	0.05 (−0.02; 0.11)	−0.01 (−0.05; 0.03)	−0.01 (−0.06; 0.04)
3. Location	Regional	Regional	273	0.15 (−0.01; 0.30) [^]	−0.01 (0.11; 0.08)	−0.10 (−0.20; −0.002)*

TABLE 3 (Continued)

Pandemic experiences		Mean difference (95% confidence interval)					
Subgroup	Group category	N	Vic ongoing lockdown effect	Vic June	NSW September		
Perceived negative impact of COVID-19 on mental health	Total sample	All	2109	0.14 (0.06; 0.23)*	−0.05 (−0.11; 0.01)^	−0.04 (−0.10; 0.02)	
	1. Caregiver gender	Female	1084	0.18 (0.07; 0.30)*	−0.06 (−0.14; 0.02)	−0.03 (−0.12; 0.05)	
		Male	1025	0.09 (−0.04; 0.21)	−0.03 (−0.11; 0.05)	−0.04 (−0.13; 0.05)	
	2. Child age (years)	0–4	334	0.11 (−0.10; 0.33)	0.001 (−0.15; 0.15)	−0.10 (−0.26; 0.06)	
		5–11	800	0.24 (0.10; 0.38)*	−0.04 (−0.14; 0.05)	−0.13 (−0.23; 0.03)*	
	12–17		975	0.04 (−0.09; 0.17)	−0.06 (−0.14; 0.02)	0.07 (−0.02; 0.17)	
		Metro	1836	0.14 (0.05; 0.23)*	−0.04 (−0.10; 0.02)	−0.02 (0.09; 0.04)	
	3. Location	Regional	273	0.09 (−0.16; 0.34)	−0.07 (−0.23; 0.09)	−0.13 (−0.31; 0.05)	
		All	2109	0.03 (−0.03; 0.09)	−0.01 (−0.04; 0.03)	0.02 (−0.02; 0.07)	
	Struggling or not coping ^c	Total sample	Female	1084	0.03 (−0.05; 0.12)	0.02 (−0.04; 0.07)	0.02 (−0.04; 0.08)
Male			1025	0.02 (−0.07; 0.11)	−0.03 (−0.08; 0.02)	0.04 (−0.02; 0.11)	
2. Child age (years)		0–4	334	0.03 (−0.13; 0.18)	−0.11 (−0.23; 0.002)^	−0.07 (−0.20; 0.06)	
		5–11	800	0.09 (−0.02; 0.19)^	−0.01 (−0.07; 0.05)	0.04 (−0.03; 0.11)	
12–17			975	−0.002 (−0.09; 0.09)	0.03 (−0.02; 0.08)	0.04 (−0.02; 0.11)	
		Metro	1836	0.05 (−0.02; 0.11)	−0.01 (−0.05; 0.03)	0.02 (−0.03; 0.07)	
3. Location		Regional	273	−0.07 (−0.24; 0.11)	0.04 (−0.05; 0.14)	0.06 (−0.06; 0.18)	
Child		Total sample	All	3576	0.12 (0.04; 0.20)*	0.02 (−0.03; 0.07)	0.04 (−0.02; 0.10)
			Female	1842	0.11 (−0.005; 0.22)^	0.02 (−0.05; 0.09)	0.10 (0.02; 0.18)*
	1. Caregiver gender	Male	1734	0.13 (0.01; 0.24)*	0.04 (−0.03; 0.11)	−0.01 (−0.09; 0.07)	
		0–4	710	0.17 (0.05; 0.29)*	−0.02 (−0.10; 0.06)	0.01 (−0.08; 0.09)	
	5–11		1548	0.11 (−0.002; 0.23)^	0.05 (−0.02; 0.13)	0.04 (−0.04; 0.12)	
		12–17	1318	0.14 (0.01; 0.26)*	0.01 (−0.07; 0.09)	0.03 (−0.05; 0.12)	
	3. Location	Metro	3099	0.13 (0.05; 0.22)*	0.04 (−0.01; 0.09)	0.05 (−0.01; 0.11)	
		Regional	477	0.02 (−0.21; 0.24)	−0.09 (0.22; 0.05)	0.02 (−0.14; 0.18)	
	Total sample	All	3576	0.02 (−0.03; 0.07)	0.002 (−0.02; 0.03)	0.03 (−0.004; 0.07)^	

(Continues)

TABLE 3 (Continued)

Pandemic experiences		Group category	N	Mean difference (95% confidence interval)		
Subgroup				Vic ongoing lockdown effect	Vic June	NSW September
1. Caregiver gender	Female		1842	0.04 (−0.03; 0.10)	−0.02 (−0.05; 0.02)	0.03 (−0.02; 0.07)
	Male		1734	−0.005 (−0.08; 0.07)	0.02 (−0.02; 0.05)	0.05 (−0.009; 0.10)
2. Child age (years)	0–4		710	−0.00004 (−0.08; 0.08)	0.04 (−0.09; 0.02)	0.005 (0.06; 0.07)
	5–11		1548	0.03 (−0.05; 0.10)	0.01 (−0.03; 0.05)	0.04 (−0.01; 0.08)
	12–17		1318	0.03 (−0.04; 0.10)	−0.001 (−0.04; 0.04)	0.03 (−0.02; 0.08)
3. Location	Metro		3099	0.04 (−0.02; 0.09)	−0.003 (−0.03; 0.02)	0.03 (−0.01; 0.06)
	Regional		477	−0.06 (−0.19; 0.07)	0.03 (−0.04; 0.10)	0.03 (−0.06; 0.13)

Note: Reference group is NSW in June. All differences are mean difference (MD); note, for binary outcomes this is a proportion between 0 and 1. Estimated difference-in-difference interaction controlling for child and caregiver age and gender (male/female), number of children, child with additional health needs (vs. not); one-caregiver family (vs. not); owns a Health Care Card (vs. not); caregiver education (<Year 10/Year 12/trade or apprenticeship/certificate or diploma/undergraduate/postgraduate); Aboriginal and Torres Strait Islander (vs. not); caregiver born outside Australia (vs. in Australia); home language other than English (vs. speaks English at home); lives regionally or rurally (vs. metropolitan); and SEIFA quintile. Caregiver mental health (total K6 score) and effects of family cluster were accounted for in all child models using robust estimation.

Abbreviations: K6, Kessler-6; SEIFA, Socio-Economic Indexes for Areas index of Relative Disadvantage.

^aJob loss by one or two adults, or reduction in income, due to COVID-19.

^bAny one or more of mortgage or rent; electricity, gas and water bills; food; healthcare; prescription medicines; home or car insurance; mobile phone bills; and internet.

^cMissing 293 caregivers who preferred not to report income.

^dK6 dichotomised into a binary “poor mental health” (total score 19 or more) versus optimal (total score 6–18).

^eVersus “coping/thriving” categories.

* $p < .05$, [†] $p < .1$.

regional/rural areas. There was no evidence of an association between the ongoing lockdown and whether the caregiver or their children were coping or not, for the cohort overall or by subgroups.

4 | DISCUSSION

This study investigated associations between COVID-19 lockdown and family finances and mental health in the context of Australia's minimal disease burden in the first year of the pandemic. In June 2020, after an initial national lockdown from March to May, a quarter of Australian caregivers of children aged 0–17 years reported job or income loss due to the pandemic. One in three reported material deprivation (being unable to afford essential items such as housing, food, amenities or healthcare). One in five caregivers reported poor mental health; half said that the first 3 months of the pandemic had negatively impacted their mental health; and a quarter perceived the same negative impact for their children. By September 2020, Victoria's ongoing lockdown (from July onwards) was associated with increased job and income loss and negative mental health impacts for caregivers and children. There was no evidence that the ongoing lockdown was related to families' experiences of material deprivation or income poverty. While the negative experiences of the ongoing lockdown were reported by families across children's ages, they were most pronounced for families with children aged 5–11 years compared with 0–4 or 12–17 years.

The financial and mental health experiences reported by the June cohort are consistent with national data. In April, the ABS estimated that 2.7 million Australians (almost 20% of the working population) lost their jobs or hours of work (Duggan et al., 1999). The Australian Temperament Project survey of 498 families from March to September 2020 (O'Connor et al., 2021) and the right@home trial survey of 319 mothers from May to December 2020 (Bryson et al., 2021) reported job/income losses of 24% and 27%, respectively, using the same questions as our study. The third of families reporting material deprivation is equivalent to pre-pandemic data from the Longitudinal Study of Australian Children (Sollis, 2019).

In our study, one in five families reported poor mental health in June 2020 according to the K6. This aligns with the Australian “Pulse of the Nation” survey in which 24% of parents reported mental distress across the first months of lockdown (measured with a single item that highly correlated with the K6; Broadway et al., 2020). While the RCH Poll lacked pre-pandemic data, substantially more caregivers reported poor mental health on the K6 in the polls than representative Australian adult data collected pre-pandemic (8% in 2017) or during the first national lockdown (11%; Edwards et al., 2020). Our study also found a differential increase in the poor mental health of Victorian caregivers of 6.7%. This is significant in statistical and absolute terms, equating to an additional 78,200 parents in Victoria (of 1,167,400) in need of mental health treatment. This finding has significant service implications in terms of ensuring that parents and their children are supported in their increased mental health needs. For example, recent evidence shows the increased mental health presentations by children as a result of the pandemic (e.g. a 30%–55% increase in presentations to emergency departments of children from socially advantaged areas in NSW; Hu et al., 2022). Despite the global differences between countries' infection rates and governments' approaches to public health restrictions, there are commonalities in the mental health data emerging from the pandemic (Dickerson, Kelly, Lockyer, Bridges, Cartwright, Willan, Shire, et al., 2021; Nearchou et al., 2020; Sciberras et al., 2022; The Royal Children's Hospital National Child Health Poll, 2020). The Born in Bradford study found that 19% and 16% of mothers reported clinically significant levels of depression and anxiety, respectively, during the first lockdown in the UK (April–June 2020; Dickerson, Kelly, Lockyer, Bridges, Cartwright, Willan, et al., 2021). In a nationally weighted survey from the US in June, 27% of parents said their mental health had declined during the pandemic (Patrick et al., 2020).

Given what is known about the negative economic and psychosocial impacts of lockdown (Dickerson, Kelly, Lockyer, Bridges, Cartwright, Willan, et al., 2021; Dickerson, Kelly, Lockyer, Bridges, Cartwright, Willan, Shire, et al., 2021; Nearchou et al., 2020; Patrick et al., 2020; Sciberras et al., 2022; The Royal Children's Hospital National Child Health Poll, 2020), it follows that the

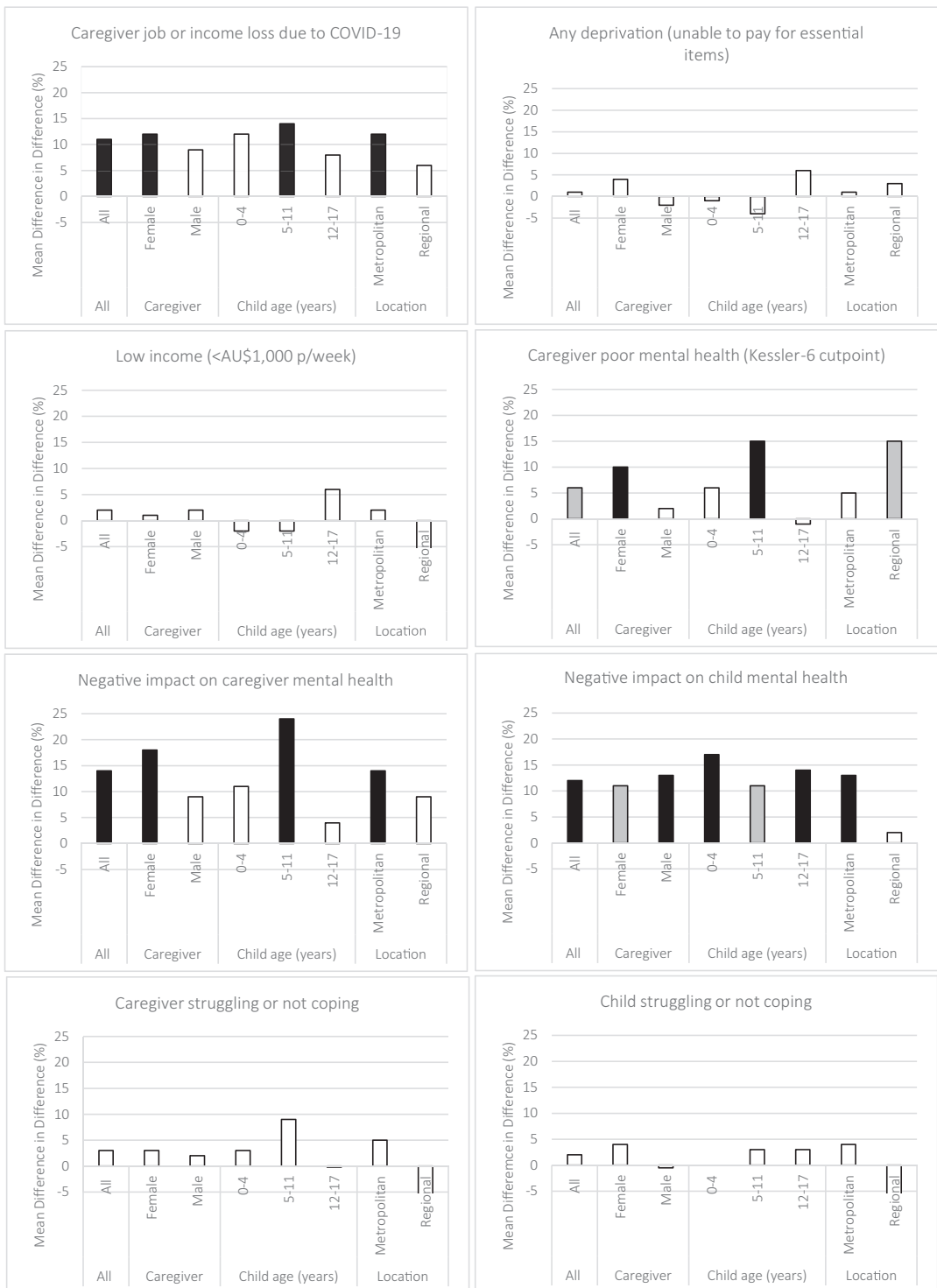


FIGURE 1 Difference-in-difference estimates (%) of associations between the ongoing lockdown and families' finances and mental health (all binary), overall and by subgroups, data drawn from Table 3 Legend: black: $p < 0.05$ | grey: $p < 0.1$ | white $p \geq 0.1$.

ongoing lockdown was associated with increased job and income loss and poor mental health in this study. Our finding that negative mental health experiences were more common for female than for male caregivers is consistent with international and Australian data (Aknin et al., 2021; Broadway et al., 2020). That families with children aged 5–11 years were most negatively affected is likely due to the stress and disruption of homeschooling in July–September. More supervision is required for children in elementary/primary school than high school, and balancing homeschooling with usual paid or unpaid work was a substantial challenge for families (Evans et al., 2020).

Our findings for children are like other studies investigating the lockdown experiences of young people (Jones et al., 2021; Racine et al., 2021; Samji et al., 2022). Analysis by the Australian Human Rights Commission in the earliest months of the pandemic found that increased numbers of older children reported first time mental health challenges or concerns of self-harm (Nicolson et al., 2020). The COVID-19 Unmasked Study, which surveyed Australian families with young children (aged 1–5 years), also found that Victorian caregivers exposed to the ongoing lockdown reported increasing mental health symptoms for themselves and their children (De Young et al., 2021). Interestingly, in the unmasked study, young children living outside Victoria (exposed to only the initial lockdown) were still experiencing higher-than-average levels of anxiety symptoms by the time of Victoria's ongoing lockdown. We found a similar pattern in our study. For the NSW families exposed to the initial lockdown only, caregivers reported improved mental health for themselves by September, but this experience was not evident for their children. It is possible that the shared experience of pandemic stress is a major contributor to the commonalities in international mental health data, over and above the viral incidence or length and severity of lockdown.

This study has several strengths. The large cross-sectional and nationally representative surveys employed strong methodology (piloted and included the validated K6) and achieved high response proportions. In other polls, indicators (frequency/prevalence) across a range of topics are almost universally consistent with more traditionally obtained estimates, providing support for the sample selection and survey administration methods. The difference-in-difference modelling is a well-established method of analysing policy change (in our case, lockdown law differences).

There are limitations to the analysis. The parallel trend assumption supposes that the untreated units (NSW in September) provide the appropriate counterfactual of the trend that the treated units would have followed if they had not been treated. While the time between the first and second surveys was short (4 months) – and minimises the potential for differential trends across NSW and Victoria – the lack of pre-pandemic data makes it impossible to verify the validity of this assumption. We looked at labour force data from the Australian Bureau of Statistics (not shown) to determine whether the industry composition in both states had similar trends pre-pandemic (Australian Bureau of Statistics, 2022). We found that the main industries were the same in both states and that prior to 2020 they were trending in a similar way. This finding reduces the risk of the results being biased due to differential industry composition. However, if for our sample this assumption is not true, and affected industries were growing faster in Victoria than NSW, then our estimates are likely to have inflated the impacts of the pandemic on job loss and employment. However, if the opposite were true, our estimates would be conservative. Some industries were differentially affected early on by pandemic restrictions (before May 2020). For example, those in the arts and accommodation were most affected by job loss (Gilfillan, 2020). However, it is unlikely that the effects were different between Victoria and NSW under the national lockdown. If they were, our estimates will be over or underestimated in the same way explained previously for job loss and employment. We rely on other studies showing that the mental health common trend assumption between Victoria and other states in Australia during the period of 2011 to 2019 holds and our estimates are likely to be unbiased (Butterworth et al., 2022).

As well as potential industry and mental health differences, compositional differences in survey participants across time and across states mean that there may be other sources contributing to the potential estimated effects. For example, casual and full-time workers were more affected by employment changes in the first months of the pandemic than part-time workers (Gilfillan, 2020). Again, if

these subpopulations were changing at different rates between the states pre-pandemic, then our estimates may over or underestimate the impacts of the pandemic on financial experiences and associated mental health. Reassuringly, demographics between the states were similar during the early months of the pandemic (Allen, 2021). We also controlled for all available, potentially confounding demographic variables in the analyses. Even so, the complex nature of adversity and mental health means that potential unknown residual confounders may have affected the estimates. For example, that the responding cohorts were more advantaged than the general population highlights the importance of research to investigate the experience of syndemic subgroups who are most likely to be negatively affected by the indirect impacts of the pandemic (Shen et al., 2020).

Finally, the reliance on caregiver report, from only one caregiver per household, means the child rating may be biased by caregiver perception, which is particularly relevant for older children and adolescents. While we controlled for parent mental health in the child analyses, we did not collect a validated measure of children's mental health that would provide a measure of clinical impact. The lack of pre-pandemic data means the first poll already captured some of the preliminary effects of the pandemic. However, the intention of the paper was to understand the experiences related to Victoria's ongoing lockdown, rather than the entire pandemic experience per se. Some caregivers did not disclose family income, and the sample sizes for children aged 0–4 years and regional/rural subgroup analyses were small, limiting power for detecting differences.

This work extends the evidence base by investigating the indirect and negative experiences of the ongoing lockdown in the context of minimal disease burden. We offer three considerations for pandemic response and recovery planning. First, while job and income loss increased with the ongoing lockdown, this did not translate to increased material deprivation or income poverty. This finding provides support for the effectiveness of the Australian government's extraordinary income supplements, introduced early in the pandemic to offset the anticipated economic fallout of lockdown. This interpretation is supported by modelling demonstrating the substantial reductions in Australia's poverty levels subsequently (Phillips et al., 2020). Given that the income supplements offered were temporary, financial security must be considered when enacting future lockdowns.

Second, for families who were unexposed to the ongoing lockdown, there was some recovery in employment/income and female caregivers' mental health. While comparable data on financial experiences are limited, the global mental health evidence also shows a recovery for many adults following an initial peak in psychological distress (Aknin et al., 2021). However, the available systematic reviews are limited by the over-representation of data from the early months of the pandemic (Jones et al., 2021; Racine et al., 2021; Samji et al., 2022), and previous pandemics show that negative mental health effects can persist (Meherali et al., 2021). While the poll data were limited, they did not suggest a recovery for children. Thus, it is important that children's experiences and needs are prioritised during response and recovery planning so that any persistent negative impacts are adequately redressed (Jones et al., 2020; Sinha et al., 2020).

Third, the negative financial and mental health experiences related to the ongoing lockdown were substantial, and disproportionately affected families with children aged 5–11 years (corresponding to elementary/primary school) and female caregivers. While this study was underpowered to investigate the experience of families living in lower socioeconomic environments, the evidence suggests that inequity is likely to be exacerbated and entrenched by the social and economic disruption of COVID-19 (Goldfeld et al., 2022; Jones et al., 2020; O'Connor et al., 2021; UN Research Roadmap for the COVID-19 Recovery, 2020). Ongoing follow-up of cohorts is necessary to understand whether and how caregivers and children recover from lockdown and how best to support the population groups who are most adversely affected.

Balancing the benefits and harms of lockdown requires planned responses to future outbreaks and evidence-informed financial and mental health supports. The clear nexus between the pandemic and inequitable associations with poorer mental health suggests a need to respond through policy-focussed action on prevention (including financial support). It also indicates a need to plan for future lockdowns through evidence-informed financial and direct mental health supports.

AUTHOR CONTRIBUTIONS

Anna M. H. Price: Conceptualization; data curation; formal analysis; funding acquisition; investigation; methodology; project administration; resources; supervision; validation; visualization; writing – original draft; writing – review and editing. **Diana Contreras-Suárez:** Conceptualization; investigation; validation; writing – review and editing. **Anna Zhu:** Conceptualization; funding acquisition; investigation; methodology; resources; validation; writing – review and editing. **Natalie Schreurs:** Project administration; writing – review and editing. **Mary-Anne Measey:** Data curation; investigation; methodology; project administration; supervision; writing – review and editing. **Susan Woolfenden:** Funding acquisition; resources; supervision; writing – review and editing. **Jade Burley:** Project administration; writing – review and editing. **Hannah Bryson:** Investigation; visualization; writing – review and editing. **Daryl Efron:** Funding acquisition; methodology; supervision; writing – review and editing. **Anthea Rhodes:** Funding acquisition; investigation; methodology; project administration; resources; supervision; writing – review and editing. **Sharon Goldfeld:** Conceptualization; funding acquisition; methodology; resources; supervision; writing – review and editing.

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CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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