

Parental well-being gap during the pandemic: Evidence from administrative data

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NZ Association of Economists, 63rd Conference, 2023

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Disclaimer

The results in this paper are not official statistics, they have been created for research purposes from the Integrated Data Infrastructure (IDI) managed by Statistics New Zealand (NZ). The opinions, findings, recommendations and conclusions expressed in this paper are those of the author(s) not Statistics NZ.

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Careful consideration has been given to the privacy, security and confidentiality issues associated with using administrative and survey data in the IDI. Further detail can be found in the Privacy impact assessment for the Integrated Data Infrastructure available from www.stats.govt.nz.

The analysis and conclusions set forth are those of the authors and do not indicate concurrence by other members of the research staff or the Board of Governors.

Outline

Background

Data & Analysis

Conclusion

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Pandemic Shutdowns and Gendered Outcomes

- Mothers were disproportionately affected by the pandemic shutdowns (Albanesi & Kim 2021a,b; Bluedorn et al., 2023) → “Covid motherhood penalty” (Couch et al., 2022).
- Alon et al. (2020) discuss some of the key underlying mechanisms:
 - Employment declines in high-contact service sectors, like hospitality.
 - Closures of schools and daycare centers increased the demand for childcare at home.
- Lockdowns → Gendered division of labor reallocation between paid work and childcare responsibilities (Farré et al., 2022; Dang & Nguyen, 2021; Foucault et al., 2020).
 - There were also shifts in perceptions, attitudes and beliefs in gender roles (Danzer et al., 2021; Boring and Moroni, 2023).
 - Further studies have used mental health and subjective well-being measures (Cheng et al., 2021; Adams-Prassl et al., 2022).

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Research Aim

- Key objective: Estimating the parental gaps in employment and mental health for young parents before and after the pandemic lockdown in NZ.
- Control group: similar sample of parents from a pre-pandemic period.
 - Pandemic period: April 2019-February 2021 - Centered around March 2020 (the lockdown month).
 - Pre-pandemic period: April 2017-February 2019 - Centered around March 2018 (the 'placebo' month).
 - Dynamic framework: Gaps are estimated from 11 months before $t = 0$ (lockdown or placebo month) to 11 months after $t = 0$.
 - Sample of parents includes all cohabiting opposite-sex couples whose youngest child is aged 1-2+ years (or 12 to 35 months).

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New Zealand's Policy Response

- NZ's pandemic shutdown:
 - The whole of NZ went into a strict nationwide lockdown on March 26th, 2020.
 - Except for “essential services”, most on-site business activities, including childcare centers and schools, were closed.
 - NZ residents were required to stay in their “bubbles”.
 - The lockdown was lifted in June 2020.
- Economic policy response:
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Data & Analysis

- Integrated Data Infrastructure (IDI) administered by Statistics NZ.
 - Houses a wide range of administrative data and surveys collected from various ministries and public agencies.
 - Linkage across datasets is possible by using unique confidentialized identifiers at the individual-level.
- Key datasets used in our analysis:
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Empirical Strategy

For each outcome, we create indicators of parental gap:

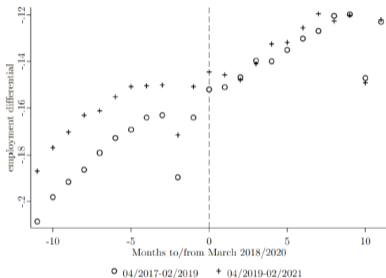
- $\Delta Y_{it}^{em} = em_{it}^M - em_{it}^F$ - Employment gap
- $\Delta Y_{it}^{mh} = mh_{it}^M - mh_{it}^F$ - Mental health gap

The outcome variable can take the following values:

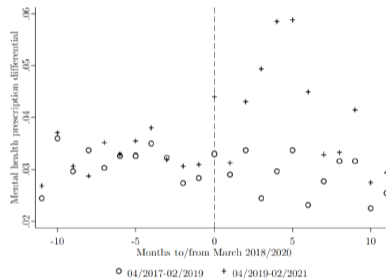
$$\Delta Y_{it} = \begin{cases} 1, & em_{it}^M = 1 \text{ and } em_{it}^F = 0 \text{ or } mh_{it}^M = 1 \text{ and } mh_{it}^F = 0 \\ 0, & em_{it}^M = em_{it}^F \text{ or } mh_{it}^M = mh_{it}^F \\ -1, & em_{it}^M = 0 \text{ and } em_{it}^F = 1 \text{ or } mh_{it}^M = 0 \text{ and } mh_{it}^F = 1 \end{cases}$$

Gaps in Employment and Mental Health Prescription

(a) Employment differential



(b) Mental health prescription differential



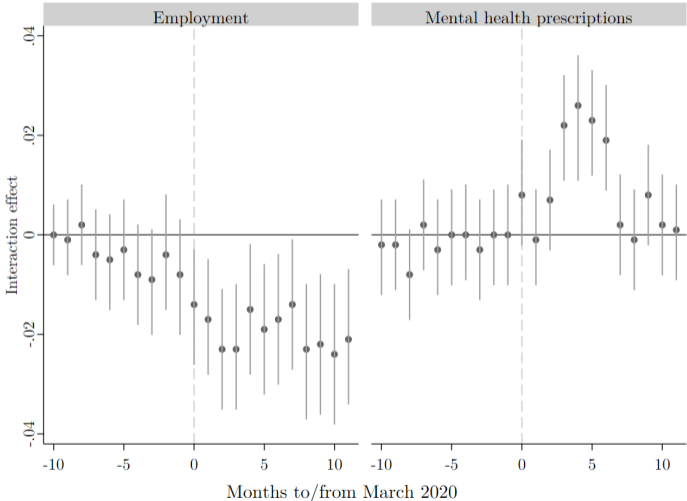
Notes: Authors' own calculation. The sample consists of 9 192 families in the control period (running from April 2017 until February 2019) and 9 486 families in the treatment period (April 2019 until February 2021). The youngest child in the family is between 12 and 35 months old in April 2017, resp. 2019.

Our dynamic empirical model is:

$$\Delta Y_{it} = \beta_0 + \text{Pandemic}_i + \sum_{\tau=-10}^{11} \rho_{\tau} \cdot D_{i\tau} + \sum_{\tau=-10}^{11} \gamma_{\tau} (D_{i\tau} \times \text{Pandemic}_i) \\ + \mu_i + \beta_3 \cdot X_{it} + u_{it}$$

- Pandemic_i : = 1 if pandemic sample; = 0 if pre-pandemic sample.
- $D_{i\tau}$ = 1 if observed time is τ months away from lockdown (placebo) month.
- X_{it} and μ_i : Individual time-variant and time-invariant characteristics, respectively.

Dynamic Model Findings



Post-lockdown labor market effects

	Mother	Father
<hr/>		
Outcome: Not employed		
Pandemic	0.030*** (0.006)	0.004 (0.005)
Employed _{t=-1}	-0.735*** (0.006)	-0.853*** (0.004)
Pandemic × Employed _{t=-1}	-0.027*** (0.008)	-0.004 (0.006)
<hr/>		
Outcome: Months employed post-lockdown		
Pandemic	-0.315*** (0.057)	0.069 (0.056)
Employed _{t=-1}	9.787*** (0.053)	10.824*** (0.045)
Pandemic × Employed _{t=-1}	0.307*** (0.074)	-0.123* (0.063)

Note: The analysis is based on months after March 2018 for control sample and after March 2020 for the treatment sample. *, **, and *** signify statistical significance at the 10, 5, and 1 percent-levels, respectively.

Mental Health Prescriptions by Post-lockdown Months

Elapsed months since lockdown:	0	6	11
Mothers			
(I) Pandemic	-0.001 (0.004)	0.002 (0.004)	-0.001 (0.004)
(II) Prior Pharmac	0.309*** (0.006)	0.252*** (0.006)	0.242*** (0.006)
(III) Pandemic × Prior Pharmac	0.089*** (0.008)	0.112*** (0.009)	-0.029*** (0.008)
Observations	18678		
Fathers			
(IV) Pandemic	0.001 (0.003)	0.001 (0.003)	-0.001 (0.003)
(V) Prior Pharmac	0.269*** (0.006)	0.252*** (0.006)	0.229*** (0.005)
(VI) Pandemic × Prior Pharmac	0.093*** (0.008)	0.009 (0.008)	-0.040*** (0.008)
Observations	18678		
(I) –(IV)	-0.002	0.003	0.000
χ^2	1.645	1.567	0.006
p-value	0.200	0.211	0.940
(III) –(VI)	-0.004	0.034	0.011
χ^2	0.019	1.875	0.241
p-value	0.889	0.171	0.623

Note: *, **, and *** signify statistical significance at the 10, 5, and 1 percent-levels, respectively.

Summary of Key Findings

- NZ's pandemic lockdown was followed by a persistent increase in the parental gap in employment.
 - Mothers are 3 percentage points more likely to be without a paid job post-lockdown.
 - Mothers who were employed in the month before the lockdown are less likely to be separated from a job.
- The parental gap in the uptake of mental health treatment also widened post-lockdown.
 - Looking at separate samples of mothers and fathers, individuals with a prior prescription medication for mental health were significantly more likely to use mental health prescription drugs during the lockdown months.
 - A 'bounce-back' effect is observed in later periods.

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Conclusion

- Contribution:
 - Using administrative data to provide evidence on the pandemic-induced gender gap in NZ
 - The key findings also hold for older school-age children.
 - The NZ government's policy response—the wage subsidy scheme—plausibly allows us to isolate the underlying drivers of the motherhood penalty.
- Way forward:
 - Analysis by industry - essential services versus non-essential services.
 - Analysis by qualification level - Utilize the Census 2018 data to look at the effects of educational attainment.

Thank You

Thank you very much for your attention!