

Paternal depression in pregnancy & after childbirth

Evidence from Growing Up in New Zealand

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Overarching aim of *Growing Up in New Zealand*

[Click here for more information!](#)

To provide contemporary **population relevant evidence** about the determinants of developmental trajectories for 21st century New Zealand children in the context of their families.

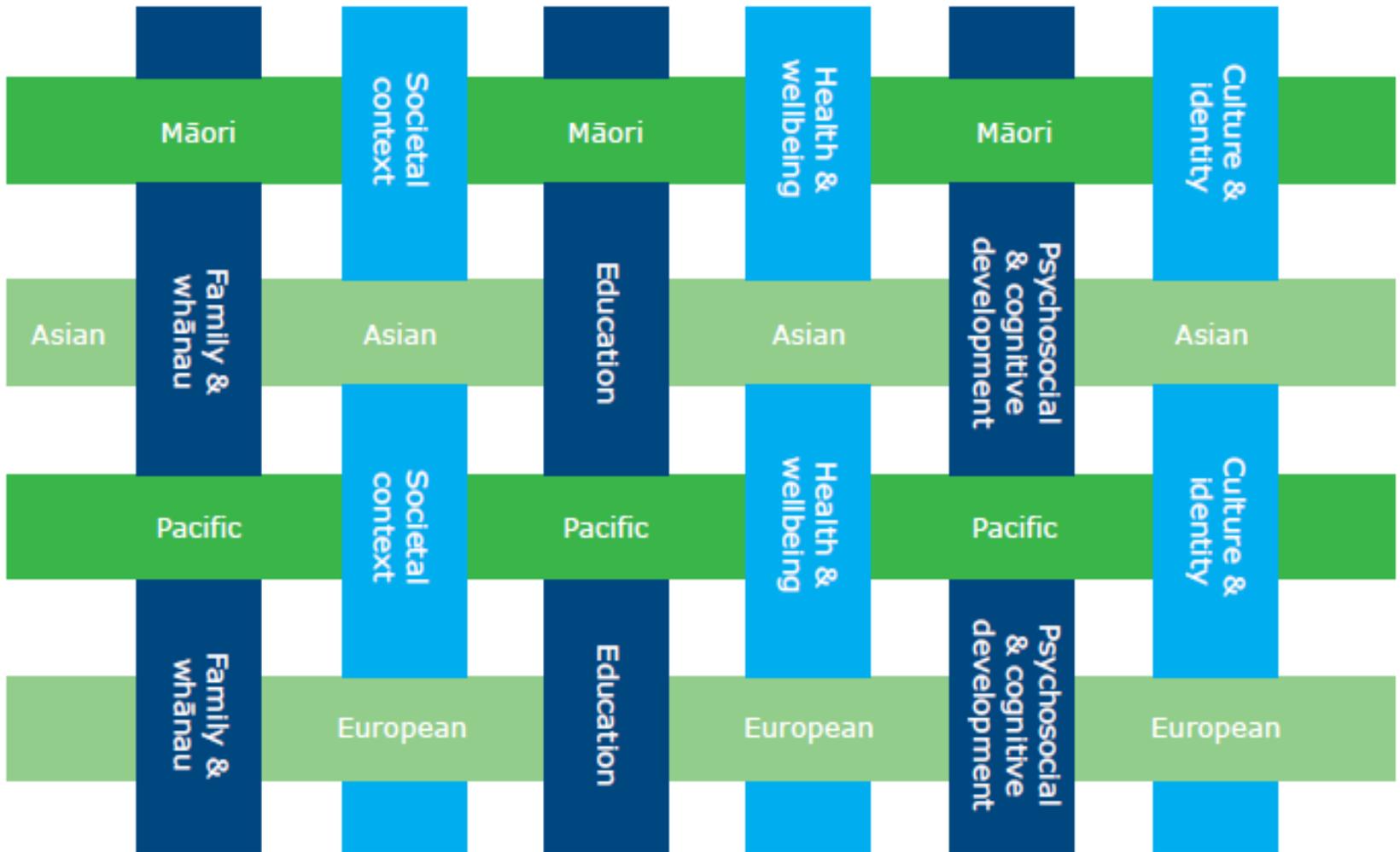
“The Ministry of Social Development and the Health Research Council of New Zealand, in association with the Families Commission, the Ministries of Health and Education and the Treasury, wish to establish a new longitudinal study of New Zealand children and families,” to gain a better understanding of the causal pathways that lead to particular child outcomes (across the life course)

..... introduction to RFP in 2004.



Snapshot of information collected

[Click here to find out how you can access data from Growing Up in New Zealand](#)



The *Growing Up in New Zealand* cohort

- Recruited 6853 children before their birth - via pregnant mothers (6823)
- **Partners recruited and interviewed independently in pregnancy (4401)**
- Cohort has adequate explanatory power to consider trajectories for Maori (1 in 4), Pacific (1 in 5) and Asian (1 in 6) children, and to consider multiple ethnic identities (approx. 40%)
- Cohort broadly generalisable to current NZ births (diversity of ethnicity and family SES)
- Data collected using face-to-face computer assisted personal interview (CAPI)
- Retention rates to 4.5 year DCW have been very high (92% with minimal attrition bias)



Longitudinal Information collected to date

Child age	Ante-natal	Peri-natal	6 wk	35 wk	9 mth	12 mth	16 mth	23 mth	2 yr	31 mth	45 mth	54 mth
Mother CAPI*												
Father CAPI*												
Mother CATI†												
Child‡												
Data linkage**												

* CAPI computer assisted personal interview | † CATI computer assisted telephone interview
 ‡ Child measurement | ** Linkage to health and education records (eg National Minimum Dataset, National Immunisation Register, ECE participation)

Click on these links for more information on each [data collection wave](#), [questionnaires](#) & [reports](#)

Paternal depression

- Maternal antenatal & postnatal depression known to be common
- Associated with poor outcomes for women and their children
- Less evidence on perinatal depression symptoms among men
 - Antenatal depression: 2.3-19% (c/w with 12-19% for women)
 - Postnatal depression: 3-10% (c/w 13-18% for women)
- Evidence of adverse developmental consequences for children, particularly for boys
- No evidence of strong link between past history of mental health problems and paternal depression (unlike mothers)
- Risk factors: partner with depression, relationship difficulties
 - mainly cross-sectional studies with small sample sizes
 - focus on the postnatal period rather than pregnancy

Research question

What demographic, social, relationship and health factors are associated with elevated depression symptoms among men whose partners are pregnant or recently gave birth?

'Partner' participants

N = 4401

- Median age: 33
- 81% employed
- 75% with tertiary qualification
- Even distribution among socioeconomic status groups
- 70% European or other, 12% Asian, 9% Māori, 9% Pacific Island

[Pryor J, Morton S, Bandara D, Robinson E, Grant C. Pregnant partners: Fathers of the Growing Up in New Zealand children. *Journal of Family Studies*. 2014;20\(1\):5-18.](#)

N for this study = 3523

Sources of data on paternal depression symptoms

Child age	Ante-natal	Peri-natal	6 wk	35 wk	9 mth	12 mth	16 mth	23 mth	2 yr	31 mth	45 mth	54 mth
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Depression measures

Edinburgh post-natal depression scale (EPDS)

- Validated for antenatal assessment of fathers
- 10 items (each rated 0 to 3)
- Total score (0 to 30)
 - 13 to 30 = probable major depression

Patient Health Questionnaire (PHQ-9)

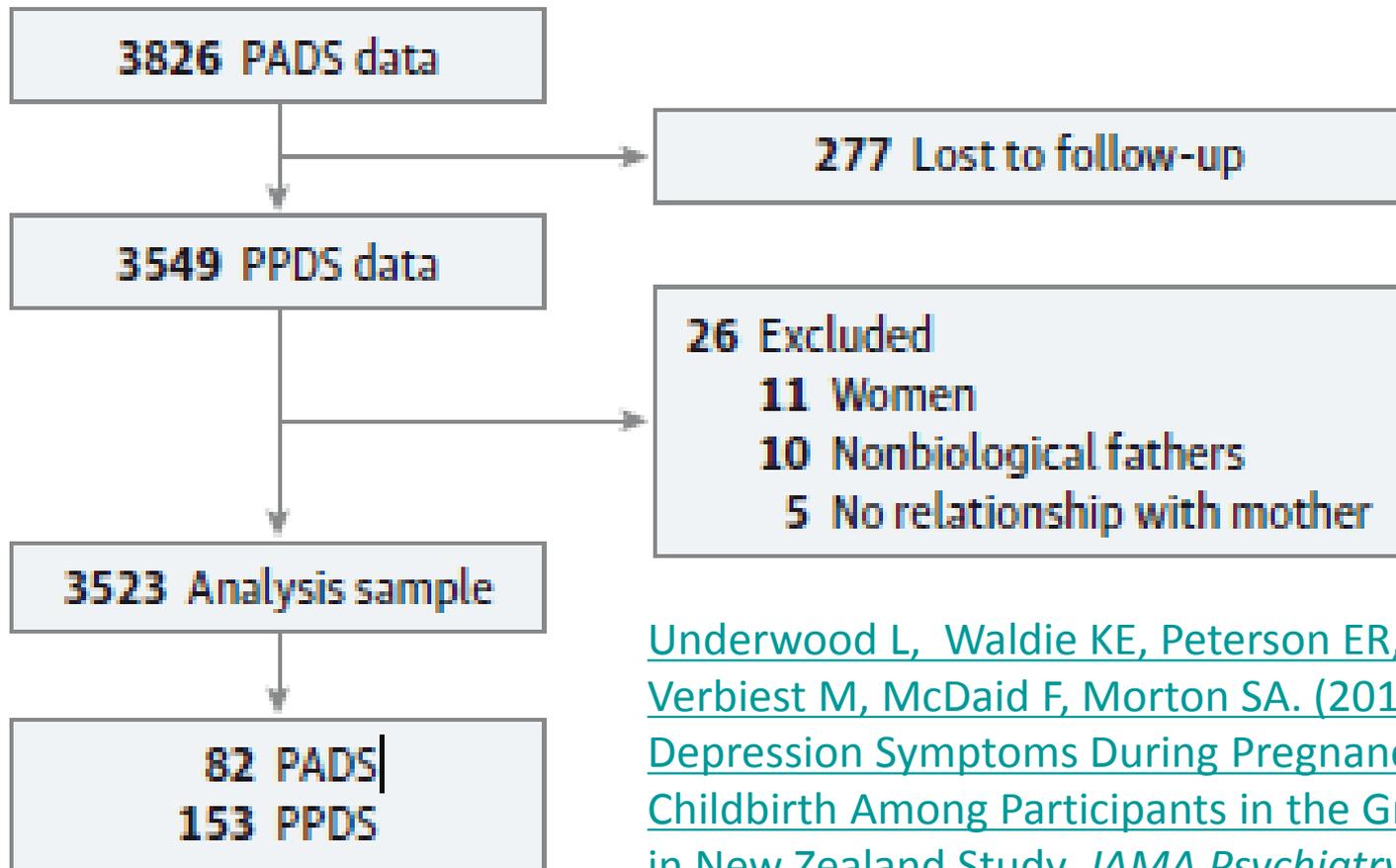
- Validated as a diagnostic, severity & outcome measure
- 9 items (each rated 0 to 3)
- Total score (0 to 27)
 - 10 to 27 = mild to severe depression
- Face to face interviews with partners of the mothers of the Growing Up in New Zealand cohort
 - During 3rd trimester of mother's pregnancy
 - Nine months after childbirth



Results – antenatal and postnatal depression

PADS=Paternal antenatal depression symptoms

PPDS=Paternal postnatal depression symptoms



[Underwood L, Waldie KE, Peterson ER, D'Souza S, Verbiest M, McDaid F, Morton SA. \(2017\). Paternal Depression Symptoms During Pregnancy and After Childbirth Among Participants in the Growing Up in New Zealand Study. *JAMA Psychiatry* 74 \(4\) 1-10 doi:10.1001/jamapsychiatry.2016.4234](#)

Results – antenatal and postnatal depression

Paternal depression symptoms

- 22% of those with paternal antenatal depression symptoms went on to have postnatal depression symptoms
- 12% of those with paternal postnatal depression symptoms had experienced antenatal depression symptoms

Maternal depression symptoms

- 26% of those with maternal antenatal depression symptoms went on to have postnatal depression symptoms
- 37% of those with maternal postnatal depression symptoms had experienced antenatal depression symptoms



Associations with past history of depression

- 8% of participants reported a past history of depression
- 26% of men with paternal antenatal depression symptoms reported a past history of depression
- 28% of men with paternal postnatal depression symptoms reported a past history of depression



Associations with maternal depression symptoms

- 26% of men with antenatal depression symptoms had a partner with maternal antenatal depression symptoms
- 17% of men with postnatal depression symptoms had a partner with maternal antenatal depression symptoms
- 18% had a partner with maternal postnatal depression symptoms



Univariate associations with paternal depression

Paternal antenatal depression symptoms

Age, alcohol consumption in partner's pregnancy, born outside New Zealand, current smoking, disability, education level, employment status, ethnicity, family environment, health status, history of anxiety, history of depression, maternal antenatal depression, perceived stress, relationship environment, relationship with baby's mother, unplanned pregnancy

Paternal postnatal depression symptoms

Age, alcohol consumption in partner's pregnancy, **deprivation** (antenatal & postnatal), disability, education level, employment status (antenatal & postnatal), ethnicity, **external environment**, family environment (antenatal & postnatal), health status (antenatal & postnatal), history of anxiety, history of depression, maternal depression (antenatal & postnatal), paternal antenatal depression, perceived stress score in partner's pregnancy, postnatal relationship with baby's mother, relationship environment (antenatal & postnatal), smoking, unplanned pregnancy

No univariate association

Deprivation, external environment, parity

Born outside New Zealand, parity

Multivariable analyses: Pre-pregnancy & pregnancy factors

Paternal antenatal depression symptoms		Paternal postnatal depression symptoms	
	OR (95% CI)		OR (95% CI)
Perceived stress	1.4 (1.3 to 1.5)	Perceived stress (in pregnancy)	1.1 (1.1 to 1.2)
Fair to poor health	2.1 (1.2 to 3.6)	Fair to poor health (in pregnancy)	1.7 (1.1 to 2.5)
Less alcohol than usual during partner's pregnancy	2.1 (1.04 to 4.2)	Smoking during partner's pregnancy	1.7 (1.1 to 2.6)
		Pre-pregnancy depression diagnosis	2.8 (1.7 to 4.6)

Men with PADS not significantly more likely to have PPDS

Multivariable analyses: Pre-pregnancy, pregnancy & **postnatal** factors

Paternal postnatal depression symptoms

	OR (95% CI)
Perceived stress (in pregnancy)	1.1 (1.1 to 1.2)
Fair to poor health (postnatal)	3.3 (2.1 to 5.2)
Smoking in partner's pregnancy AND postnatally	1.7 (1.04 to 2.6)
Pre-pregnancy depression diagnosis	2.8 (1.7 to 4.8)
Unemployed (postnatal)	1.9 (1.1 to 3.1)
Difficult relationship environment (postnatal)	0.97 (0.95 to 0.99)
Difficult family environment (postnatal)	0.93 (0.91 to 0.96)
No longer in relationship with child's mother	6.3 (2.3 to 17.8)



Maternal factors

Maternal antenatal depression symptoms

Unplanned pregnancy
Moderate to severe nausea in pregnancy

Maternal antenatal and/or postnatal depression symptoms

Pacific or Asian ethnicity
Antenatal unemployment
Antenatal relationship environment
Antenatal family environment
Anxiety before and during pregnancy
≥1 Alcoholic drinks a week in pregnancy

Maternal postnatal depression symptoms

Antenatal depression symptoms

Paternal factors

Paternal antenatal depression symptoms

Drinking less alcohol than usual during pregnancy

Paternal antenatal and/or postnatal depression symptoms

Fair to poor health

Paternal postnatal depression symptoms

Postnatal relationship environment
Postnatal family environment
Continuing to smoke during pregnancy and after childbirth
No longer in relationship with baby's mother
Postnatal unemployment

Maternal and paternal factors

Maternal and paternal antenatal and/or postnatal depression symptoms

Antenatal perceived stress

Maternal and paternal postnatal depression symptoms

History of depression

[Underwood L, et al. \(2017\). Paternal Depression Symptoms During Pregnancy & After Childbirth Among Participants in the Growing Up in New Zealand Study. *JAMA Psychiatry* 74 \(4\) 1-10 doi:10.1001/jamapsychiatry.2016.4234](#)

[Underwood L, Waldie K, D'Souza S, Peterson ER, Morton SA. \(2017\) A Longitudinal study of pre-pregnancy & pregnancy risk factors associated with antenatal & postnatal symptoms of depression: evidence from Growing Up in New Zealand. *Maternal & Child Health Journal* 21 \(4\) 915–931.](#)

[Waldie K, Peterson ER, D'Souza S, Underwood L, Pryor JE, ...Morton S. \(2015\). Depression symptoms during pregnancy: Evidence from Growing Up in New Zealand. *Journal of Affective Disorders* 186, 66-73.](#)

Conclusions

- Rates of PADS / PPDS (2.3% / 4.3%) were in line with previous studies using the same assessment tools
- Perceived stress in pregnancy and paternal health status consistently associated with paternal depression symptoms
- Maternal depression symptoms not a risk factor for paternal depression symptoms when other factors taken into account
- More factors significantly associated at a univariate level with PPDS than with PADS (e.g. education, deprivation, employment).
 - Unclear if due to different risk factors in each perinatal period or because of different measures of depression symptoms.
 - Different risk factors compared with maternal depression?
Pacific or Asian ethnicity, anxiety

Conclusions

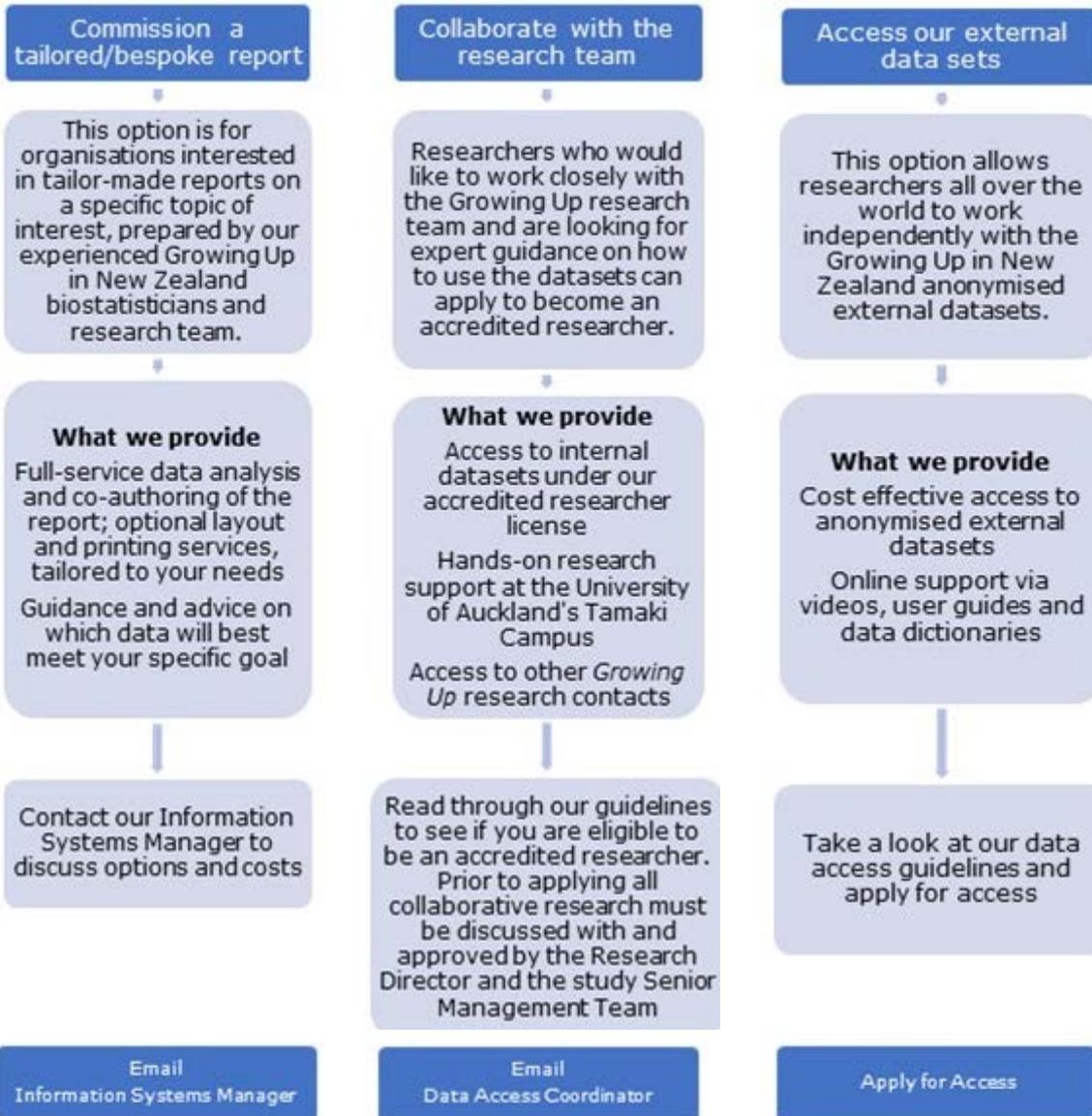
- Need to identify men at-risk of depression, while their partners are pregnant or after their child has been born
 - Focus on social factors
- Understanding who is most at risk for depression may help us design better methods to help the whole family
- Factors associated with paternal depression may have direct or indirect effects on the health of the child
 - Thus, important to recognise & treat depressive symptoms among fathers as well as address social adversity

Acknowledgements

- **Participants and their families**
- *Growing Up* team
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- Superu and Families Commission
- Ministry of Social Development
- Multiple other government agencies
- Collaborative partners
- Policy Forum members
- Advisory and Stakeholder groups (DAC, ESAG, PF)
- GUiNZ Executive Board



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