

***Prevalence, antecedents and perceptions of efficacy of treatments of postnatal depression in Australia***

Catherine Louise Chojenta

BA (Psych) Hons

Thesis submitted for the degree PhD (Gender and Health)

August 2013



## ***Statement of originality***

The thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository, subject to the provisions of the Copyright Act 1968.

Catherine Chojenta



## ***Acknowledgements***

The research on which this thesis is based was conducted as part of the Australian Longitudinal Study on Women's Health (ALSWH), the University of Newcastle and the University of Queensland. ALSWH is funded by the Australian Government Department of Health and Ageing. I would also like to thank the University of Newcastle for additional funding and support of my project.

I would like to thank the participants of ALSWH. Their ongoing commitment to the project has provided valuable data on their health and wellbeing over the past 18 years. I would like to especially thank the subset of women who participated in interviews – their willingness to share their thoughts and experiences provided valuable insights into the experiences of young mothers in Australia.

Special thanks and acknowledgements to my supervisors A/Prof Deborah Loxton and A/Prof Jayne Lucke for their support and encouragement while preparing this thesis. They have not only shared their research expertise with me, but also provided me with their valuable perspectives into the world of academia. Thanks also to Peta Forder for statistical oversight in Chapter 7, Dr Meredith Tavener for reviewing Chapter 4 and Dr Eliza Fraser for reviewing Chapter 8. I did not take the decision to embark on a PhD lightly, and should acknowledge and thank my mentors Prof Julie Byles, Dr Penny Warner-Smith and Prof Lois Bryson who along with Deb, helped me find the confidence to pursue a career in research.

This thesis would not have been possible without support from a great many people. A big thank you to my PhD Support group – especially to Lyn Adamson, Rosie Mooney, Melissa Harris, Jane Rich, Amy Anderson and Nicole Reilly, you have all helped me so much throughout my PhD journey and I hope I have been a similar help through yours.

My family have played a critical role in supporting me throughout my thesis. My husband Paul has provided unfailing support to me for the last 16 years, and throughout my thesis has been no exception. We have achieved many goals together, and I hope this is just another one of more to come. To my kids Lola and Lloyd whose unconditional love warms my heart every day – they made the transition to working from home a delightful experience. To my friends who have shared the many ups and downs of life together – to know that their support is unconditionally available is a constant source of encouragement; I am privileged to be a part of a circle of such amazing people.

I would finally like to dedicate this thesis to my parents Lesley and Ian Ireland and to my mother-in-law Kay Chojenta, who passed away towards the end of my PhD journey. Regardless of their own life struggles, they have found the strength to support and motivate me, and knowing the unwavering pride they have always had in my achievements has encouraged me to reach my goals.

## **Relevant publications/presentations**

- Chojenta C, Anderson A, Gresham E, Harris M, Rich J. *The Australian Longitudinal Study on Women's Health: Insights from Research Higher Degree Candidates*. Australian Women's Health Network Conference, Sydney, NSW, May 8-10, 2013.
- Holden L, Dobson A, Byles J, Chojenta C, Dolja-Gore X, Hockey R, Lee C, Loxton D, Mishra G. *Mental Health: Findings from the Australian Longitudinal Study on Women's Health*. Report prepared for the Australian Government Department of Health and Ageing, 2013.
- Chojenta C, Loxton D & Lucke J. How does previous mental health, social support and stressful life events contribute to postnatal depression in a representative Australian sample? *Journal of Midwifery and Women's Health*, 2012, 57 (2): 145-150.
- Chojenta C, Loxton D, Lucke J, Forder P. *A longitudinal analysis of the predictors and antecedents of postnatal depression in Australian women*. Poster presentation as the International Marce Society Conference, Paris, France, 3-5 October 2012.
- Chojenta C, Loxton D, Lucke J. *'The perfect mother wouldn't have that': Australian women's experiences of motherhood and postnatal depression*. Poster presentation as the International Marce Society Conference, Pittsburgh, USA, 27-30 October 2010.
- Chojenta C, Loxton D, Lucke J. *'The perfect mother wouldn't have that': Australian women's experiences of motherhood and postnatal depression*. 16th Qualitative Health Research Conference, Vancouver, Canada, October 3-5, 2010.
- Chojenta C, Loxton D & Lucke J. *Prevalence and antecedents of postnatal depression in Australia*. The New National Agenda: The 6th Australian Women's Health Conference, Hobart, 18-21 May, 2010.
- Loxton D & Lucke J. *Reproductive health: Findings from the Australian Longitudinal Study on Women's Health*. Report prepared for the Australian Government Department of Health and Ageing, 2009.
- Chojenta C, Lucke J, Loxton D. *An examination of the narratives of women who have experienced postnatal depression in Australia*. Poster presentation at the 5th International Mixed Methods Conference, University of Leeds, UK, 8-11 July 2009.
- Chojenta C, Lucke J & Loxton D. Does social support reduce the likelihood of postnatal depression in Australian mothers? *Archives of Women's Mental Health*, 2009, 12 (Suppl 1) S20.
- Chojenta C, Lucke J & Loxton D. *Does social support reduce the likelihood of postnatal depression in Australian mothers?* Poster presentation at the Marce Society International Conference, Sydney, NSW, 10-13 September 2008.
- Chojenta C, Loxton D & Lucke J. *Prevalence and antecedents of postnatal depression in Australia*. 3rd International Congress on Women's Mental Health, Melbourne, Victoria, 17-20 March 2008.





# ***Table of Contents***

<b>Statement of originality .....</b>	<b>iii</b>
<b>Acknowledgements .....</b>	<b>v</b>
<b>Relevant publications/presentations .....</b>	<b>vii</b>
<b>List of tables .....</b>	<b>xv</b>
<b>List of figures .....</b>	<b>xvii</b>
<b>Abstract.....</b>	<b>xix</b>
<b>Chapter 1. Introduction .....</b>	<b>1</b>
<b>1.1 Contextualising the research question .....</b>	<b>2</b>
1.1.1 Perinatal Mental Health Policy in Australia .....	2
<b>1.2 Multi-Methods Design.....</b>	<b>4</b>
<b>1.3 Research Design .....</b>	<b>5</b>
<b>1.4 Thesis outline.....</b>	<b>6</b>
<b>Chapter 2. Critical review of the prevalence, antecedents and efficacy of treatments of postnatal depression in Australia.....</b>	<b>9</b>
<b>2.1 Literature Search Strategy .....</b>	<b>9</b>
<b>2.2 Definition and diagnosis of postnatal depression .....</b>	<b>10</b>
<b>2.3 Context and rationale .....</b>	<b>13</b>
<b>2.4 Theories of predictors of postnatal depression.....</b>	<b>15</b>
<b>2.5 Psychosocial Model of Depression .....</b>	<b>19</b>
2.5.1 Applying the psychosocial model of depression .....	23
2.5.2 Limitations of the psychosocial model of depression .....	24
<b>2.6 Predictors of postnatal depression .....</b>	<b>26</b>
2.6.1 Psychosocial and demographic predictors of postnatal depression .....	26
2.6.1.1 Demographics .....	26
2.6.1.2 Health behaviours .....	28
2.6.1.3 Life events, social experience .....	29
2.6.1.4 Social support .....	31
2.6.1.5 Health service use.....	33
2.6.1.6 Physical health.....	33
<b>2.6.2 Pre-pregnancy predictors of postnatal depression .....</b>	<b>34</b>
2.6.2.1 Mental health .....	34
<b>2.6.3 Pregnancy-related predictors of postnatal depression .....</b>	<b>36</b>

2.6.3.1	Pregnancy health .....	36
2.6.3.2	Pregnancy and reproductive history .....	37
<b>2.6.4</b>	<b>Childbirth .....</b>	<b>38</b>
2.6.4.1	Proximal childbirth issues .....	38
<b>2.6.5</b>	<b>Postnatal period.....</b>	<b>39</b>
2.6.5.1	Stress and coping .....	39
2.6.5.2	Sleeping patterns .....	40
2.6.5.3	Infant health and breastfeeding.....	40
<b>2.6.6</b>	<b>Experience of diagnosis and treatment efficacy of postnatal depression .....</b>	<b>41</b>
2.6.6.1	Experience of diagnosis .....	42
<b>2.7</b>	<b>Conclusion .....</b>	<b>45</b>
<b>Chapter 3. Methods.....</b>		<b>49</b>
<b>3.1</b>	<b>The Australian Longitudinal Study on Women’s Health .....</b>	<b>51</b>
3.1.1	The ALSWH 1973-78 cohort .....	52
<b>3.2</b>	<b>Research phases.....</b>	<b>57</b>
3.2.1	Preliminary quantitative analysis of the antecedents of postnatal depression using ALSWH survey data (Study 1) .....	57
3.2.2	Longitudinal qualitative analysis using incidental data collected by the ALSWH (Study 2) .....	59
3.2.3	Longitudinal analysis of the predictors and antecedents of postnatal depression using ALSWH data (Study 3).....	61
3.2.4	Qualitative exploration of experience of living with postnatal depression and treatment efficacy in a sample of ALSWH participants (Study 4).....	63
<b>Chapter 4. Preliminary quantitative analysis of the antecedents of postnatal depression using ALSWH survey data (Study 1).....</b>		<b>67</b>
<b>4.1</b>	<b>Introduction .....</b>	<b>67</b>
<b>4.2</b>	<b>Methods.....</b>	<b>69</b>
4.2.1	Participants .....	69
4.2.2	Measures.....	70
4.2.3	Analysis.....	72
<b>4.3</b>	<b>Results .....</b>	<b>73</b>
<b>4.4</b>	<b>Discussion.....</b>	<b>76</b>
4.4.1	Limitations .....	78
4.4.2	Strengths .....	79
<b>4.5</b>	<b>Conclusion .....</b>	<b>79</b>
<b>Chapter 5. Longitudinal qualitative analysis using incidental data collected by the ALSWH (Study 2) .....</b>		<b>81</b>
<b>5.1</b>	<b>Introduction .....</b>	<b>81</b>
<b>5.2</b>	<b>Method .....</b>	<b>82</b>
5.2.1	Analysis Strategy 1: keyword search.....	83
5.2.2	Analysis Strategy 2: mixed methods approach .....	83

5.2.3	Participants .....	84
5.2.4	Analysis.....	88
<b>5.3</b>	<b>Results .....</b>	<b>90</b>
<b>5.4</b>	<b>Case Studies .....</b>	<b>96</b>
5.4.1	Case Study 1 .....	96
5.4.2	Case Study 2 .....	100
<b>5.5</b>	<b>Discussion .....</b>	<b>103</b>
5.5.1	Language used by participants.....	103
5.5.2	Commonly discussed topics .....	104
<b>5.6</b>	<b>Relationship between themes .....</b>	<b>106</b>
5.6.1	Mental Health + Abuse and trauma .....	106
5.6.2	Mental Health + Stress.....	107
5.6.3	Stress + Life events .....	107
5.6.4	Stress + Transitions .....	108
5.6.5	Transitions + Living arrangements, Rurality, transport .....	109
5.6.6	Living arrangements, Rurality, transport + Work, employment .....	109
5.6.7	Living arrangements, Rurality, transport + Social support .....	110
5.6.8	Social support + family and relationships .....	110
5.6.9	Transitions + Life events .....	111
5.6.10	Life events + Accident .....	111
5.6.11	Obstetrics and gynecology and reproductive history + Family planning .....	112
5.6.12	Family planning + pregnancy.....	112
5.6.13	Pregnancy + Labour .....	113
5.6.14	Breastfeeding + Parenting .....	113
<b>5.7</b>	<b>Strengths.....</b>	<b>114</b>
<b>5.8</b>	<b>Limitations .....</b>	<b>114</b>
<b>5.9</b>	<b>Conclusion .....</b>	<b>115</b>
<b>Chapter 6.</b>	<b>Longitudinal analysis of the predictors and antecedents of postnatal depression (Study 3).....</b>	<b>117</b>
<b>6.1</b>	<b>Introduction.....</b>	<b>117</b>
<b>6.2</b>	<b>Method.....</b>	<b>119</b>
6.2.1	Participants .....	119
6.2.2	Measurement of postnatal depression .....	119
6.2.3	Sample .....	120
6.2.4	Measures .....	121
<b>6.3</b>	<b>Analysis strategy .....</b>	<b>131</b>
<b>6.4</b>	<b>Results .....</b>	<b>132</b>
6.4.1	Sample Composition.....	132
6.4.2	Univariate results.....	134
6.4.3	Full model of predictors of postnatal depression.....	148
<b>6.5</b>	<b>Discussion .....</b>	<b>151</b>
6.5.1	Univariate results.....	151
6.5.2	Multivariate results .....	156
6.5.3	Limitations.....	158

6.5.4	Strengths .....	158
<b>6.6</b>	<b>Conclusion .....</b>	<b>159</b>
<b>Chapter 7. Qualitative exploration of experience of living with postnatal depression and treatment efficacy (Study 4)..... 161</b>		
<b>7.1</b>	<b>Introduction .....</b>	<b>161</b>
7.1.1	Aims:.....	162
<b>7.2</b>	<b>Methodological considerations .....</b>	<b>162</b>
<b>7.3</b>	<b>Methods.....</b>	<b>163</b>
7.3.1	Approvals and ethical considerations.....	164
7.3.2	Sampling criteria.....	165
7.3.3	Recruitment and data collection.....	166
7.3.4	Interviews .....	166
7.3.5	Data analysis strategy.....	168
<b>7.4</b>	<b>Results .....</b>	<b>169</b>
7.4.1	Profile of sample .....	169
7.4.2	Major themes identified in the interviews.....	170
<b>7.5</b>	<b>Discussion.....</b>	<b>170</b>
7.5.1	Life Histories.....	170
7.5.2	Pregnancy .....	174
7.5.3	Labour.....	175
7.5.4	First 12 weeks.....	177
7.5.5	Diagnosis of postnatal depression .....	179
7.5.6	Conflict with partner .....	180
7.5.7	Treatment.....	180
7.5.8	Support.....	182
7.5.9	Feelings about postnatal depression .....	183
7.5.10	Views about future children.....	184
<b>7.6</b>	<b>Strengths .....</b>	<b>185</b>
<b>7.7</b>	<b>Limitations .....</b>	<b>186</b>
<b>7.8</b>	<b>Conclusion .....</b>	<b>186</b>
<b>Chapter 8. Discussion .....</b>		
<b>189</b>		
<b>8.1</b>	<b>Prevalence of postnatal depression .....</b>	<b>190</b>
<b>8.2</b>	<b>Predictors of postnatal depression.....</b>	<b>192</b>
8.2.1	Cross-cutting themes.....	192
8.2.2	Pre-pregnancy .....	201
8.2.3	Pregnancy .....	204
8.2.4	Childbirth.....	206
8.2.5	Postnatal.....	207
<b>8.3</b>	<b>Revisiting the Brown and Harris Psychosocial Model of Depression.....</b>	<b>210</b>
8.3.1	Implications of the updated Brown and Harris Psychosocial Model of Depression .....	213
<b>8.4</b>	<b>Women’s experiences of screening, diagnosis and treatment for postnatal depression</b>	<b>213</b>

<b>8.5</b>	<b>Strengths</b> .....	<b>215</b>
<b>8.6</b>	<b>Limitations</b> .....	<b>216</b>
<b>8.7</b>	<b>Screening of current mood and psychosocial risk</b> .....	<b>218</b>
<b>8.8</b>	<b>Conclusion</b> .....	<b>220</b>
	<b>References</b> .....	<b>223</b>
	<b>Appendices</b> .....	<b>237</b>
<b>Appendix.A</b>	<b>Diagnoses questions (postnatal depression, depression, anxiety)</b> .....	<b>237</b>
A.1	Survey 2 (2000) .....	237
A.2	Survey 3 (2003) .....	238
A.3	Survey 4 (2006) .....	239
A.4	Survey 5 (2009) – postnatal depression.....	240
A.5	Survey 5 (2009) – depression and anxiety .....	241
<b>Appendix.B</b>	<b>MOS Social Support Index</b> .....	<b>243</b>
<b>Appendix.C</b>	<b>Thematic analysis of open-ended comments with examples</b> .....	<b>245</b>
<b>Appendix.D</b>	<b>Childbirth questions, Survey 5 (2009)</b> .....	<b>265</b>
<b>Appendix.E</b>	<b>SF-36 Mental Health Inventory</b> .....	<b>267</b>
E.1	Items used to construct MHI .....	267
E.2	Development of a categorical variable for MHI.....	267
<b>Appendix.F</b>	<b>Life Orientation Test Revised (LOT-R)</b> .....	<b>271</b>
F.1	Items used to construct LOT-R score .....	271
F.2	Development of a categorical variable for LOT-R.....	271
<b>Appendix.G</b>	<b>Mean Stress variable development</b> .....	<b>273</b>
G.1	Items used to create mean stress score .....	273
G.2	Development of a categorical variable for mean stress .....	273
<b>Appendix.H</b>	<b>Proportion of life events</b> .....	<b>275</b>
H.1	Items used to construct proportion of life events score .....	275
H.2	Development of a categorical variable for proportion of life events.....	276
<b>Appendix.I</b>	<b>SF-36 General Health</b> .....	<b>277</b>
I.1	Items used to construct General Health.....	277
I.2	Development of a categorical variable for General Health.....	277
<b>Appendix.J</b>	<b>Demographics – items used</b> .....	<b>279</b>
J.1	Income .....	279
J.2	Education.....	279
J.3	Employment.....	280
J.4	Sexual orientation .....	280
J.5	Partner status .....	280
J.6	Area of residence .....	281
<b>Appendix.K</b>	<b>Correlation matrix for full model of predictors</b> .....	<b>283</b>
<b>Appendix.L</b>	<b>Study 4 Cover letter and Information sheet</b> .....	<b>287</b>
<b>Appendix.M</b>	<b>Study 4 Interview schedule</b> .....	<b>291</b>
<b>Appendix.N</b>	<b>Interviews coding tree</b> .....	<b>301</b>



## **List of tables**

Table 1 Retention and attrition for 1973-78 cohort .....	53
Table 2 The relationship between previous mental health, demographics, life events, social support and postnatal depression (unadjusted and adjusted odds ratios).....	74
Table 3 Number of comments found per keyword search.....	83
Table 4 Comparison of participants who have commented versus those who did not comment at each survey.....	87
Table 5 Coding tree.....	94
Table 6 Univariate odds ratios (OR) and 95% confidence intervals (95% CI) for postnatal depression (PND) and childbirth predictors with forest plot .....	136
Table 7 Univariate odds ratios (OR) and confidence intervals (95% CI) for postnatal depression (PND) and history of childbirth predictors with forest plot .....	137
Table 8 Univariate odds ratios (OR) and confidence intervals (95% CI) for postnatal depression (PND) and mental health history predictors with forest plot.....	138
Table 9 Univariate odds ratios (OR) and confidence intervals (95% CI) for postnatal depression (PND) and reproductive health predictors with forest plot .....	139
Table 10 Univariate odds ratios (OR) and confidence intervals (95% CI) for postnatal depression (PND) and infant health and postpartum predictors with forest plot.....	140
Table 11 Univariate odds ratios (OR) and confidence intervals (95% CI) for postnatal depression (PND) and history of infant health and postpartum predictors with forest plot.	141
Table 12 Univariate odds ratios (OR) and confidence intervals (95% CI) for postnatal depression (PND) and social support predictors with forest plot.....	142
Table 13 Univariate odds ratios (OR) and confidence intervals (95% CI) for postnatal depression (PND) and health behaviour predictors with forest plot.....	143
Table 14 Univariate odds ratios (OR) and confidence intervals (95% CI) for postnatal depression (PND) and stressful life events predictors with forest plot.....	144
Table 15 Univariate odds ratios (OR) and confidence intervals (95% CI) for postnatal depression (postnatal depression) and general health predictors with forest plot.....	145

Table 16 Univariate odds ratios (OR) and confidence intervals (95% CI) for postnatal depression (PND) and pregnancy predictors with forest plot .....	146
Table 17 Univariate odds ratios (OR) and confidence intervals (95% CI) for postnatal depression (PND) and history of pregnancy predictors with forest plot .....	146
Table 18 Univariate odds ratios (OR) and confidence intervals (95% CI) for postnatal depression (PND) and demographic predictors with forest plot.....	148
Table 19 Adjusted odds ratios (OR) and confidence intervals (95% CI) for postnatal depression (PND) and predictors with forest plot.....	150
Table 20 Demographic description of interview sample (N=150).....	169
Table 21 Coding tree with count of instances and examples .....	245
Table 22 Correlation matrix for full model .....	283
Table 23 Coding tree – major themes identified in interviews (N=16).....	301



## **List of figures**

Figure 1 Brown and Harris' (1978) causal model of depression.....	19
Figure 2 Themes (in white boxes) under investigation across the life course phases (in grey boxes) .....	50
Figure 3 Schedule of surveys (surveys in black are utilised in this project).....	51
Figure 4 Attrition and responses to surveys .....	54
Figure 5 Patterns of survey completion .....	56
Figure 6 Sample composition .....	59
Figure 7 Sample composition .....	61
Figure 8 Sample selection for Study 3 .....	63
Figure 9 Sample composition .....	85
Figure 10 Relationship between major themes identified .....	91
Figure 11 Number of children per mother who completed Survey 5 (2009) .....	133
Figure 12 Reported cases of postnatal depression per child.....	134
Figure 13 The modified psychosocial model of postnatal depression (modifications in red) .....	212
Figure 14 Distribution of MHI scores (0 - 100).....	268
Figure 15 Grey line indicates odds ratios for MHI divided into percentiles around the mean. Black line indicates linear relationship. ....	269
Figure 16 Odds ratios for MHI when divided into 4 categories .....	269
Figure 17 Odds ratios for categorical variable created for the LOT-R in grey, line of normal distribution in black.....	272
Figure 18 Odds ratio for mean stress scores for 4 categories around the mean.....	274

Figure 19 Odds ratios for categorical variable created for proportion of life events in grey, line of normal distribution in black ..... 276

Figure 20 Grey line indicates odds ratios for General Health divided into percentiles around the mean. Black line indicates linear relationship. .... 278

Figure 21 Odds ratios for General Health when divided into 4 categories ..... 278

## ***Abstract***

While new motherhood is socially perceived to be a time of great elation and joy, this life stage is also a time of great risk for mental health problems and emotional difficulties. For women, these problems can have long-term impacts including putting them at risk for ongoing mental health problems and dissatisfaction with motherhood. This in turn may reduce infant-mother bonding which can have impacts on the infant's mental health and intelligence even into childhood. The most common form of mental health morbidity in the perinatal period is postnatal depression, affecting between 10-20% of mothers in Australia (National Health and Medical Research Council 2000).

This thesis fills a gap in the current literature by examining both the proximal and distal factors related to postnatal depression in Australia by using longitudinal data collected on a national, broadly representative, sample of women. A longitudinal, multi-methods design was employed to examine the complex associations between risk factors and to also explore the lived experience of new mothers who have experienced postnatal depression.

Prior history of mental health conditions were particularly evident as having a significant impact on risk of postnatal depression, as was long-term experience of stressful life events and lack of social support. In addition health and stressful life events in pregnancy and postpartum such as breastfeeding, emotional distress during labour and sleep deprivation had an impact on the occurrence of postnatal depression. The results indicated that understanding a woman's mental health history is very

important in the detection of those who are most vulnerable to postnatal depression.

These findings also indicate that treatment and management of depression and anxiety earlier in life may have a positive impact on the incidence of postnatal depression.

The findings of this project can direct future mental health clinical guidelines regarding postnatal depression and support the premise of early intervention for mental health problems. By preventing first incidences of mental health problems, recurrences such as those in the perinatal period should be reduced, which in turn will have a positive impact on mother-infant bonding, and on maternal health outcomes and infant outcomes.