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The impact of routine assessment of past or current mental health on help-seeking in the perinatal period

Nicole M. Reilly
University of Wollongong, nreilly@uow.edu.au

Sheree Harris
University of Newcastle

Deborah J. Loxton
University of Newcastle

Catherine Chojenta
University of Newcastle

Peta Forder
University of Newcastle

See next page for additional authors

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Abstract

Background: Clinical practice guidelines now recommend that women be asked about their past or current mental health as a routine component of maternity care. However, the value of this line of enquiry in increasing engagement with support services, as required, remains controversial. **Aim:** The current study aimed to examine whether assessment of past or current mental health, received with or without referral for additional support, is associated with help-seeking during pregnancy and the postpartum. **Methods:** A subsample of women drawn from the Australian Longitudinal Study on Women's Health (young cohort) who reported experiencing significant emotional distress during pregnancy (N= 398) or in the 12 months following birth (N= 380) participated in the study. **Results:** Multivariate analysis showed that women who were not asked about their emotional health were less likely to seek any formal help during both pregnancy (adjOR = 0.09, 95%CI: 0.04-0.24) and the postpartum (adjOR = 0.07, 95%CI: 0.02-0.13), as were women who were asked about these issues but who were not referred for additional support (antenatal: adjOR = 0.26, 95%CI: 0.15-0.45; postnatal: adjOR = 0.14, 95%CI: 0.07-0.27). However, considerable levels of consultation with general practitioners, midwives and child health nurses, even in the absence of referral, were evident. **Conclusion:** This study demonstrates that enquiry by a health professional about women's past or current mental health is associated with help-seeking throughout the perinatal period. The clinical and resource implications of these findings for the primary health care sector should be considered prior to the implementation of future routine perinatal depression screening or psychosocial assessment programmes.

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Authors

Nicole M. Reilly, Sheree Harris, Deborah J. Loxton, Catherine Chojenta, Peta Forder, and Marie-Paule Austin

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17 midwives and child health nurses, even in the absence of referral, were evident.

18 **Conclusion:** This study demonstrates that enquiry by a health professional about women's past or current
19 mental health is associated with help-seeking throughout the perinatal period. The clinical and resource
20 implications of these findings for the primary health care sector should be considered prior to the
21 implementation of future routine perinatal depression screening or psychosocial assessment programs.

22

23 **Keywords:** screening, psychosocial assessment, pregnancy, postnatal, referral, treatment, help seeking

1 **Introduction**

2 The importance of optimising the mental health of women during the perinatal period has been
3 recognised internationally¹. In an effort to minimise mental health morbidity associated with childbearing,
4 a growing number of regions have developed and implemented programs for the early identification,
5 treatment and management of depression and related disorders during pregnancy and the postpartum²⁻⁸.
6 Several clinical practice guidelines now recommend routine enquiry about a woman's mental health
7 history during the perinatal period^{2,6,8-9}, as well as routine screening for current symptoms of depression
8 using the Edinburgh Postnatal Depression Scale^{2,9} or other case-finding questions⁶ or approaches⁸.
9 Although research has shown that women who are asked about their current or past mental health are
10 more likely to be referred for further support or management than women who are not asked about these
11 aspects of their health¹⁰, there remains a lack of definitive evidence relating to whether this line of
12 enquiry in turn facilitates help seeking among women who experience significant emotional distress
13 during pregnancy or in the year following birth.

14 The few international studies that have addressed this issue have reported equivocal findings. For
15 example, an evaluation of the New Haven Healthy Start Depression Initiative reported no significant
16 difference in treatment rates before or after deployment of its depression screening program¹¹, and an
17 examination of New Jersey's state-wide screening program was unable to demonstrate any policy-
18 associated changes in initiation of treatment among women enrolled in Medicaid¹². In contrast, a recent
19 cluster-randomised trial in the United States, which aimed to examine the effect of a practice-based
20 program for screening, diagnosis and management of depression in postpartum women, reported greater
21 uptake of treatment (counselling, medication, or a combination of these) among women with elevated
22 depression screening scores in the intervention arm compared to those receiving care as usual¹³. Similar
23 increases in treatment rates have been reported in a randomised-controlled trial of integrated depression
24 screening among postpartum women in Hong Kong¹⁴. Evaluations of other perinatal depression
25 screening programs, including those implemented in Australia, have been limited by the absence of a
26 'care as usual' or 'not screened' comparison group^{4,15-21} making it difficult to examine the independent

1 impact of routine assessment of current mental health on initiation of treatment. These discrepancies and
2 gaps in the evidence-base have contributed to a number of reports cautioning against routine depression
3 screening both during pregnancy and in the postpartum ²²⁻²⁴.

4 Compounding this, no studies to date have addressed whether routine enquiry into a woman's
5 mental health history during the perinatal period impacts positively on help seeking at this time. This is
6 despite a history of mental health issues being consistently identified as a risk factor for poorer perinatal
7 mental health outcomes ^{22, 25-30}, and despite such questions being central to the psychosocial assessment,
8 prediction or risk reduction components of clinical practice guidelines in a number of countries ^{2, 6, 8}. In
9 addition, although more well-designed perinatal depression screening or psychosocial assessment
10 programs include systems to ensure referral for further treatment or support if required (e.g., ¹³), none
11 have isolated the role of this referral, over and above the role of the screening or assessment alone, in
12 their evaluations of service use outcomes.

13 The current study sought to respond to these issues by using survey data from a sample of women
14 who have recently given birth in Australia. Specifically, the aim of the study was to examine whether
15 assessment of past or current mental health, received with or without referral for additional support, is
16 associated with help-seeking during pregnancy and the postpartum.

17

18 **Participants and methods**

19 *Sample and data source*

20 This research was conducted as a sub-study of the Australian Longitudinal Study on Women's
21 Health (ALSWH) ³¹⁻³² and involved the completion of an additional survey by a sub-group of women
22 from the cohort born between 1973 and 1978. At the time of initial recruitment in 1996, the 1973-1978
23 ALSWH cohort were broadly representative of the population of Australian women in this age group,
24 with some overrepresentation of tertiary educated women and women from English speaking
25 backgrounds ³³⁻³⁵. These women have been surveyed up to five times over 13 years (in 1996, 2000, 2003,
26 2006 and 2009).

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Participant sampling frame

Details of the current study’s sampling frame have been described elsewhere ³⁶. To summarise, the sampling frame was restricted to women from the 1973-1978 cohort who: i) had responded to the ALSWH 5th Main Survey in 2009; and ii) had given birth to a child during or after July 2007. 2,316 women met these criteria and were invited to participate in the ALSWH perinatal sub-study.

Procedure

Participants were invited to answer mailed survey questions relating to reproductive health and maternity care with respect to their youngest child, and the pregnancy for that child (henceforth referred to as the index child). All sub-study surveys were returned between January 2011 and June 2011. Data were used from both the sub-study survey as well as the surveys from the ALSWH Main Surveys, where appropriate. Written informed consent was obtained from all participants for the collection of sub-study data, and to linkage of sub-study data with previously collected ALSWH Main Survey data. To preserve anonymity and confidentiality, data were de-identified prior to analysis.

Measures

This study adhered to ALSWH policies and procedures for the development of sub-study survey instruments ³². A number of questions were directly replicated from the ALSWH Main Surveys for the purposes of item consistency (e.g., item relating to assessment of current mental health during pregnancy and the postpartum; items relating to number of service contacts with a general practitioner (modified from a scale previously used by the Australian Bureau of Statistics³⁷) while other questions were developed specifically to address the aims of the current research (e.g., item relating to referral for additional treatment or support).

Help seeking for emotional health issues in the perinatal period

1 Respondents were asked if they had consulted with or used a range of treatment or support
2 options for ‘emotional issues’ during the index pregnancy and postnatal period. Although broad, this
3 terminology was chosen for its accessibility to community samples³⁸ and comparability with the
4 language of widely distributed Australian consumer resources (e.g.³⁹), and because it did not restrict the
5 focus of the research to seeking help for depression alone.

6 Multiple help seeking options were operationalised dichotomously (yes/no) for each of the
7 following categories: mental health professional; general practitioner; midwife (during pregnancy) / child
8 health nurse (postnatal); and medication. Inpatient admission / emergency department presentation were
9 collapsed into a single dichotomous variable (yes/no), as were residential or day-stay parenting service,
10 phone help line / internet, and family / friends / social networks. In addition, an overall dichotomous
11 variable ‘any formal health treatment’, which combined a number of these help seeking options, was
12 operationalised (see Table 2 for detail).

13 ***Assessment of current or past mental health (received with or without referral):*** Respondents
14 indicated if they had been asked by their health practitioner/s (general practitioner; obstetrician; midwife;
15 other) about: a) their ‘current emotional health (e.g., given a questionnaire to complete)’, or b) their
16 ‘mental health history’; and c) if they were ‘given a referral for additional treatment, help or support for
17 emotional issues’ by their health practitioner/s (general practitioner; obstetrician; midwife /child health
18 nurse ; other), and to indicate if this applied for the antenatal or postnatal periods, or both. A woman was
19 considered to have received an assessment if she responded ‘yes’ to (a) or (b), and to have received a
20 referral if she responded ‘yes’ to (c).

21 To facilitate analyses, women were then grouped according to the combination of assessment and
22 referral reported as follows: i) assessment with referral; ii) assessment without referral; iii) no assessment
23 or referral. This approach was applied to the antenatal and postnatal periods separately.

24 ***Significant emotional distress (index pregnancy/child):*** Respondents were asked to indicate if
25 they had experienced any number of ‘emotional health issues’ (e.g., depression or postnatal depression;
26 anxiety; stress or distress) during the index pregnancy or within the first 12 months following the birth of

1 the index child. A woman was considered to have experienced *significant emotional distress* if she
2 answered yes to any these issues *and* also indicated: i) that she felt she needed or wanted help for that
3 issue, or ii) if that issue interfered with her functioning or relationships with family/friends, or both.

4 ***Prior treatment for mental health issues:*** Information was drawn from the ALSWH Main
5 Surveys for Young Women in 2000 (S2), in 2003 (S3), in 2004 (S4) and in 2009 (S5, if completed prior
6 to the index pregnancy). Women were asked if:

7 a) they had sought help for i) depression (S2-S5); ii) anxiety (S2-S5), or iii) other mental health
8 problems (S4 and S5 only) in the past 12 months, and

9 b) if they had used prescription medication for depression or anxiety in the past four weeks (S2-
10 S4 only).

11 A woman was considered to have a history of prior treatment for mental health issues if she gave
12 an affirmative response to one or more of the options listed in (a) or (b).

13 ***Additional variables:*** Additional covariates included maternal educational level, employment
14 status, partner status, number of previous children, ease of managing on their available income, maternity
15 care sector for the index pregnancy and birth, and whether or not information relating to perinatal mental
16 health was received during the perinatal period. This data was collected in the perinatal sub-study survey.
17 Data relating to primary language spoken at home was taken from the first ALSWH Main Survey.

18

19 **Statistical methods**

20 Each category of help seeking was analysed as a separate outcome variable for descriptive
21 analyses. Logistic regression was used to assess associations between women who did and did not seek
22 help for emotional issues, in terms of level of assessment of past or current mental health (with or without
23 referral), socio-demographic variables, receipt of information relating to perinatal mental health and
24 previous help seeking for mental issues help seeking for emotional issues. The latter variables were
25 included in the analyses as these have been reported to be predictors of help seeking for mental health
26 issues in the perinatal period^{21, 40-43}.

1 The following six categories of help seeking were analysed as a separate outcome in the
2 regression models: any formal health treatment; mental health professional; general practitioner; midwife
3 (during pregnancy) / child health nurse (postnatal); phone help line / internet; and family / friends / social
4 networks. Use of psychotropic medications and treatment for emotional health issues in an inpatient
5 setting, emergency department, or day or residential parenting service were not included as separate
6 outcomes in these analyses due to low numbers of women indicating use of these services.

7 In order to examine the role of assessment received with a referral for additional treatment or
8 support care in facilitating help seeking relative to both i) assessment received without a referral, and ii)
9 receipt of neither an assessment or referral, women who were *assessed and referred* were chosen as the
10 reference group. Univariate logistic regressions were first performed to identify any significant or
11 marginally significant relationships. All significant and marginally significant variables ($p < 0.10$) were
12 then included in a multivariate logistic regression model. These analyses were undertaken for the
13 antenatal and postnatal periods separately. All analyses were performed in SPSS version 21.0⁴⁴.

14

15 **Results**

16 Seventy-nine percent of women (n=1835) returned completed questionnaires for this ALSWH
17 perinatal sub-study between January 2011 – July 2011. To maintain consistency with previous studies
18 (e.g.,¹³⁻¹⁴), the current analyses were restricted to women who indicated that they had experienced
19 *significant* emotional distress during the index antenatal or postnatal period. After excluding women who
20 did not meet this and other eligibility criteria, the final sample size for analysis was N=398 for the
21 antenatal period, and N=380 for the postnatal period (see Figure 1). The socio-demographic
22 characteristics, level of assessment received and overall help seeking behaviours of participants are
23 presented in Table 1 and Table 2, respectively.

24 Results of logistic regression analyses relating to the antenatal and postnatal periods are presented
25 in Table 3 and Table 4, respectively. After controlling for a range of factors known to impact on help
26 seeking for emotional health issues, women were less likely to seek any formal health treatment if they

1 were not asked about their past or current mental health (antenatal: adjOR=0.09, 95% CI:0.04-0.24,
2 p<.001; postnatal: adjOR=0.07, 95% CI:0.02-0.13, p<.001) or if this assessment was received in the
3 absence of a referral for additional support (antenatal: adjOR=0.26, 95% CI:0.15-0.45, p<.001; postnatal:
4 adjOR=0.14, 95% CI:0.07-0.27, p<.001) than women that were assessed *and* referred,

5 More specifically, women who were *not* assessed in the antenatal period were up to 93% *less*
6 likely to seek help from mental health professionals (adjOR=0.10, 95% CI:0.04-0.24, p<.001), general
7 practitioners (adjOR=0.07, 95% CI:0.03-0.20, p<.001) or midwives (adjOR=0.17, 95% CI:0.06-0.48,
8 p=.001) at any time during pregnancy than women who were assessed *and* referred. In the postnatal
9 period, women who were *not* assessed were also more than 90% *less* likely to seek help from mental
10 health professionals (adjOR=0.06, 95% CI:0.02-0.16, p<.001), general practitioners (adjOR=0.08,
11 95% CI:0.04-0.18, p<.001) or child health nurses (adjOR=0.08, 95% CI:0.03-0.21, p<.001).

12 Similarly, compared to women who were assessed *and* referred, those who were assessed *but not*
13 referred were less likely to seek help from mental health professionals (antenatal: adjOR=0.15,
14 95% CI:0.08-0.26, p<.001; postnatal: adjOR=0.10, 95% CI:0.06-0.18, p<.001), general practitioners
15 (antenatal: adjOR=0.28, 95% CI:0.17-0.48, p<.001; postnatal: adjOR=0.18, 95% CI:0.11-0.30, p<.001) and
16 child health nurses (adjOR=0.28, 95% CI:0.17-0.46, p<.001) across the full perinatal period. However
17 there was no significant difference between women who were assessed, but who or were not referred, in
18 terms of their consultation with midwives during pregnancy (p=.217).

19 There was also no evidence to suggest that women who were assessed, with or without referral,
20 were more or less likely to seek help from their partner, family or social networks throughout the perinatal
21 period, though women who were not assessed, or who were assessed but not referred, were less likely to
22 use self-help options (phone help lines / internet) for emotional health issues in the postnatal period only
23 (adjOR=0.23, 95% CI:0.08-0.62, p=.004; adjOR=0.36, 95% CI:0.21-0.64, p<.001, respectively).

24

25 **Discussion**

1 This study demonstrates that the impact of enquiry about past or current mental health on help
2 seeking for emotional health issues throughout the perinatal period is most apparent when women are also
3 referred by their health care provider for additional follow-up or management, as required. While this
4 finding applied consistently across most professional groups, the role of referral, over and above enquiry
5 alone, in increasing consultation with midwives for emotional issues during pregnancy was not evident.
6 In addition, even in the absence of referral, up to a third of women who were asked about their past or
7 current mental health reported consulting with midwives, child health nurses or general practitioners
8 about emotional health issues, with the rate of engagement with the primary care sector increasing to up
9 to 75% for women who were asked about these issues and referred for additional care or support. These
10 results complement local research which has shown that women consider primary care staff as trusted
11 sources of emotional support ⁴⁵, and are also in line with the evaluation of the Australian National
12 Postnatal Depression Program (2001-2005) which reported that by the program's end, there was less
13 reliance by general practitioners and child health nurses on referral to mental health professionals ⁴⁶. The
14 current findings suggest that the training that is recommended as a core component of perinatal
15 depression screening and psychosocial assessment programs in Australia ^{2-3, 7, 47} has continued to be
16 successful in helping primary care professionals manage women identified through the assessment
17 process as requiring further support or management.

18 While enquiry about past or current mental health in the absence of the need for a referral did not
19 appear to place additional pressure on scarce mental health resources in the current study, the clinical and
20 resource implications of these findings for the primary health care sector need to be considered. Routine
21 assessment of past and current mental health by primary care professionals, undertaken in the presence of
22 an integrated framework providing clear decision making guidelines around the need for management,
23 referral and treatment, is the preferred model of care outlined in the Australian Clinical Practice
24 Guidelines for Perinatal Depression and Related Disorders ² and related initiatives ^{3, 7}. The capacity to
25 deliver this care is enhanced to some degree in Australia by the Better Access to Mental Health Care
26 scheme ⁴⁸ and the increasingly utilised perinatal-specific stream of the Access to Allied Psychological

1 Services scheme, which aims to build the capacity of general practitioners to better support women with
2 perinatal depression, provide psychological treatment and follow-up services for women, and strengthen
3 key links and referral pathways with maternity services⁴⁹. However, while maternity workforces have a
4 willingness to provide direct care for women with emotional distress⁵⁰, the cost implications of their
5 provision of this component of care were not included in economic modelling conducted prior to the
6 implementation of the National Perinatal Depression Initiative⁴⁷ and have not been reported in the time
7 since. In addition, research has shown that unless well-prepared and supported, the delivery of
8 psychosocial assessment can impact negatively on the personal well-being of maternity staff⁵¹, and
9 perceived lack of competence can impede their provision of emotional care and support⁵⁰. While these
10 issues can be addressed through training, continuing professional development and clinical supervision,
11 these avenues of support are not always available to, or accessed by, front-line staff⁵¹⁻⁵².

12 Consistent with other local research^{19, 45, 53}, the current study also showed that family, friends or
13 social networks are a key support option for a majority of women during pregnancy and the postnatal
14 period, irrespective of whether an assessment was offered or referral for additional support was required.
15 While these results suggest high rates of disclosure by women to family and friends, it is important to also
16 consider the potential consequences to pregnant women and new mothers experiencing significant
17 emotional issues when informal avenues of support fail, and how such an outcome may be avoided. In
18 Australia, awareness of postnatal depression appears to be at a high level in the general population,
19 however knowledge and understanding of the signs and symptoms of depression, the prevalence of
20 perinatal anxiety, and importance of antenatal depression is more disparate⁵³ and further emphasises why
21 ongoing psychoeducation and community awareness campaigns should be a key component of any
22 mental health prevention and early intervention program^{47, 54-55}.

23 Interestingly, 11% of women indicated that they sought support from phone help lines or the
24 internet overall, increasing to 18% postnatally. While these rates are higher than the overall 9% of
25 respondents who indicated using the internet to seek information about emotional issues in a recent
26 general population survey³⁸, the role of assessment and referral in facilitating use of these resources was

1 apparent only in the year following birth. Stigma has been consistently identified as a barrier to care⁵⁶
2 and it would be useful to further examine, for example, whether the possible anonymity afforded by these
3 support options is of greater importance to women in the postnatal period than in the antenatal period, or
4 whether use of these resources is related to increased engagement with additional and complementary
5 support or treatment options.

6 It is important to note that despite all women in the this selected sample reporting they had
7 experienced a significant level of emotional distress during the index perinatal period – that is, distress
8 which interfered with their functioning or for which they felt they needed or wanted help – not all sought
9 further support or care from either primary care or mental health providers. While rates of non-
10 engagement with formal health services were lower among women who were asked about their past or
11 current mental health (and lowest among women who also received a referral for additional support)
12 ongoing efforts to reduce un-met need for support where this is indicated must remain a priority.

13 Several limitations of the current study should be noted. These include its use of self-report
14 measures and timing of data collection, as some studies have suggested that women’s recall of maternity
15 care may change over time⁵⁷⁻⁵⁸. Our sample had higher proportions of tertiary-level educated women,
16 women with an English-speaking background and women who gave birth in the private maternity sector
17 than mothers of the same age in the general population in Australia⁵⁹⁻⁶⁰, which may limit the
18 generalisability of our results. We are also not able to determine if reported assessment of current
19 emotional health was by means of recommended tools (e.g., the EPDS, although existing research has
20 shown that around 80% of women assessed during their pregnancy in the public maternity setting were
21 given the EPDS⁶¹) or whether referral for additional follow-up or support occurred after a single or repeat
22 enquiry about a women’s current mental health. Nor can we definitively comment on the proportion of
23 women who were asked about their current or past mental health but who were not experiencing
24 significant distress at the time of enquiry and so were not referred, nor the proportion of women who may
25 have been in need of a referral, but as a result of *not* being referred, did not go on to seek help. While
26 recent local research has demonstrated that around 90% of surveyed maternity hospitals have protocols

1 for the referral or follow-up of women identified as possibly depressed, or at risk of developing
2 depression, large variation in criteria for referral was noted⁵². We are also unable to ascertain whether the
3 health care providers who enquired about a women's history of mental health issues appropriately
4 distinguished more significant or severe past episodes from mild episodes that may have less clinical
5 relevance in this context, or which had been adequately resolved by the time of the index pregnancy and
6 birth. This issue is particularly relevant to the potential over-identification of women who may be
7 considered 'at risk' based on their endorsement of a 'past mental health history', not least because
8 management of false positives can be a key driver of increased health care costs⁶². There is a need for
9 future research to examine how information relating to the severity and significance of past mental health
10 episodes can be distilled to best inform appropriate levels of care planning.

11 A number of design features of this study do however provide strength to our data and analysis.
12 Our sample was large, not limited to a single geographical location, and was inclusive of a 'non-assessed'
13 comparison group. We examined the use of a broad range of formal and informal help seeking options
14 across both the antenatal and postnatal periods, and were concerned with a broader definition of
15 significant emotional distress than that relating to postnatal depression alone. Importantly, we were able
16 to isolate the role of referral for further care or support, over and above enquiry about current or past
17 mental health alone, in facilitating help seeking in both the primary care and mental health sectors. In
18 addition, we controlled for a range of predictors of help seeking, and the use of longitudinal data allowed
19 for inclusion of prior treatment for mental health issues in the analyses.

20

21 **Conclusion**

22 We have shown previously that women who are asked about their past and current mental health
23 during the perinatal period are more likely to be referred for additional treatment, help or support for
24 emotional issues than women are not asked about these aspects of their health¹⁰. Adding to these earlier
25 findings, the current study demonstrates that this line of enquiry, together with referral for additional
26 support, facilitates help seeking among women who are experiencing significant emotional distress during

1 pregnancy and in the year following birth. The importance of primary health care professionals as an
2 integral source of support for women is particularly evident.

3 The World Health Organisation has recognised that the inclusion of emotional and mental health
4 as part of routine antenatal and postnatal care, and the integration of this care into general health care
5 settings, may allow access to better and more cost-effective interventions for a greater number of women
6 and families⁶³. However, closer attention to true, rather than modelled, rates of service utilisation, and
7 types of services with which pregnant and postnatal women engage, are vital for future evaluations of the
8 cost-effectiveness of perinatal depression screening or broader psychosocial assessment programs, as base
9 models have previously assumed that all women who are identified as ‘depressed’ will go on to receive
10 extensive intervention⁶². Further research into the cascading impact of enquiry about past or current
11 mental health, referral and subsequent help seeking during the perinatal period on short- and longer-term
12 maternal health outcomes is also required.

13

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1 **References**

- 2 1. WHO. Mental health aspects of women's reproductive health : a global review of the literature.
3 Geneva: World Health Organization, Library Cataloguing-in-Publication Data; 2009.
- 4 2. Austin M-P, Hight N, and the Guideline Expert Advisory Committee. The *beyondblue* Clinical
5 Practice Guidelines for Depression and Related Disorders — Anxiety, Bipolar Disorder and
6 Puerperal Psychosis — in the Perinatal Period. A Guideline for Primary Care Health
7 Professionals Providing Care in the Perinatal Period. Melbourne: beyondblue: the national
8 depression initiative; 2011.
- 9 3. Australian Government Department of Health and Ageing. Framework for the national perinatal
10 depression initiative 2008-09 to 2012-13. 2009 [cited 2013 18 July]; Available from:
11 [http://www.health.gov.au/internet/publications/publishing.nsf/Content/mental-pubs-f-perinat-
13 toc~mental-pubs-f-perinat-fra](http://www.health.gov.au/internet/publications/publishing.nsf/Content/mental-pubs-f-perinat-
12 toc~mental-pubs-f-perinat-fra)
- 14 4. Honikman S, van Heyningen T, Field S, Baron E, Tomlinson M. Stepped Care for Maternal
15 Mental Health: A Case Study of the Perinatal Mental Health Project in South Africa. PLoS Med.
16 2012;9(5):e1001222.
- 17 5. Kotelchuck M. Evaluating the Healthy Start Program: A Life Course Perspective. Matern Child
18 Health J. 2010 2010/09/01;14(5):649-53.
- 19 6. NICE. Antenatal and postnatal mental health: The NICE guidelines on clinical management and
20 service guidance CG45. National Collaborating Centre for Mental Health The British
21 Psychological Society & The Royal College of Psychiatrists. 2007.
- 22 7. NSW Department of Health. NSW Health/Families NSW Supporting Families Early Package –
23 SAFE START Strategic Policy: NSW Department of Health; 2010.
- 24 8. SIGN. Management of perinatal mood disorders (SIGN Publication no. 127). Edinburgh: Scottish
25 Intercollegiate Guidelines Network 2012.
- 26 9. Australian Health Ministers' Advisory Council. Clinical Practice Guidelines: Antenatal Care –
Module 1. Canberra: Australian Government Department of Health and Ageing; 2012.

- 1 10. Reilly N, Harris S, Loxton D, Chojenta C, Forder P, Milgrom J, et al. Referral for Management of
2 Emotional Health Issues During the Perinatal Period: Does Mental Health Assessment Make a
3 Difference? *Birth*. 2013 December;40(4):297-306.
- 4 11. Yonkers KA, Smith MV, Lin H, Howell HB, Shao L, Rosenheck RA. Depression screening of
5 perinatal women: An evaluation of the Healthy Start Depression Initiative. *Psychiatric Services*.
6 2009;60(3):322-8.
- 7 12. Kozhimannil KB, Adams AS, Soumerai SB, Busch AB, Huskamp HA. New Jersey's Efforts To
8 Improve Postpartum Depression Care Did Not Change Treatment Patterns For Women On
9 Medicaid. *Health Affairs*. 2011;30(2):293-301.
- 10 13. Yawn BP, Dietrich AJ, Wollan P, Bertram S, Graham D, Huff J, et al. TRIPPD: A Practice-Based
11 Network Effectiveness Study of Postpartum Depression Screening and Management. *The Annals*
12 *of Family Medicine*. 2012 July 1, 2012;10(4):320-9.
- 13 14. Leung SSL, Leung C, Lam TH, Hung SF, Chan R, Yeung T, et al. Outcome of a postnatal
14 depression screening programme using the Edinburgh Postnatal Depression Scale: a randomized
15 controlled trial. *Journal of Public Health*. 2011;33(2):292-301.
- 16 15. Sword W, Busse D, Ganann R, McMillan T, Swinton M. Women's care-seeking experiences after
17 referral for postpartum depression. *Qual Health Res*. 2008;18:1161-73.
- 18 16. Burton A, Patel S, Kaminsky L, Rosario GD, Young R, Fitzsimmons A, et al. Depression in
19 pregnancy: time of screening and access to psychiatric care. *Journal of Maternal-Fetal and*
20 *Neonatal Medicine*. 2011;24(11):1321-4.
- 21 17. Flynn H, O'Mahen H, Massey L, S. M. The impact of a brief obstetrics clinic-based intervention
22 on treatment use for perinatal depression. *J Womens Health*. 2006;15:1195-204.
- 23 18. Goodman J, Tyer-Viola L. Detection, Treatment, and Referral of Perinatal Depression and
24 Anxiety by Obstetrical Providers *Journal of Women's Health*. 2010;19(3):477-90.
- 25 19. Reay R, Matthey S, Ellwood D, Scott M. Long-term outcomes of participants in a perinatal
26 depression early detection program. *Journal of Affective Disorders*. 2011;129:94-103.

- 1 20. Rowan P, Greisinger A, Brehm B, Smith F, McReynolds E. Outcomes from implementing
2 systematic antepartum depression screening in obstetrics. *Archives of Women's Mental Health*.
3 2012;15(2):115-20.
- 4 21. Segre LS, O'Hara MW, Brock RL, Taylor D. Depression screening of perinatal women by the
5 Des Moines Healthy Start project: Program description and evaluation. *Psychiatric Services*.
6 2012;63(3):250-5.
- 7 22. Myers ER, Aubuchon-Endsley N, Bastian LA, Gierisch JM, Kemper AR, Swamy GK, et al.
8 Efficacy and Safety of Screening for Postpartum Depression. *Comparative Effectiveness Review*
9 106. AHRQ Publication No. 13-EHC064-EF. Rockville, MD: Agency for Healthcare Research
10 and Quality; 2013.
- 11 23. Hill C. An evaluation of screening for postnatal depression against NSC criteria. London: UK
12 National Screening Committee 2010.
- 13 24. Hewitt CE, Gilbody SM. Is it clinically and cost effective to screen for postnatal depression: a
14 systematic review of controlled clinical trials and economic evidence. *BJOG: An International*
15 *Journal of Obstetrics & Gynaecology*. 2009 Jul;116(8):1019-27.
- 16 25. Beck CT. A meta-analysis of predictors of post-partum depression. *Nurs Res*. 1996;45:297-303.
- 17 26. Lancaster CA, Gold KJ, Flynn HA, Yoo H, Marcus SM, Davis MM. Risk factors for depressive
18 symptoms during pregnancy: a systematic review. *American Journal of Obstetrics and*
19 *Gynecology*. 2010;202(1):5-14.
- 20 27. Milgrom J, Gemmill AW, Bilszta JL, Hayes B, Barnett B, Brooks J, et al. Antenatal risk factors
21 for postnatal depression: A large prospective study. *Journal of Affective Disorders*. 2008;108(1-
22 2):147-57.
- 23 28. O'Hara M, Swain, A. Rates and risk of post-partum depression: a meta-analysis. *International*
24 *Review of Psychiatry*. 1996;8:37-54.

- 1 29. Schmied V, Johnson M, Naidoo N, Austin MP, Matthey S, Kemp L, et al. Maternal mental health
2 in Australia and New Zealand: a review of longitudinal studies. *Women & Birth: Journal of the*
3 *Australian College of Midwives.* 2013;26(3):167-78.
- 4 30. Banti S, Mauri M, Oppo A, Borri C, Rambelli C, Ramacciotti D, et al. From the third month of
5 pregnancy to 1 year postpartum. Prevalence, incidence, recurrence, and new onset of depression.
6 Results from the Perinatal Depression–Research & Screening Unit study. *Comprehensive*
7 *Psychiatry.* 2011;52(4):343-51.
- 8 31. Chojenta C, Mooney R, Warner-Smith P. Accessing and disseminating longitudinal data:
9 Protocols and policies. *International Journal of Multiple Research Approaches.* 2007;1:104-13.
- 10 32. Helman J, Loxton D, Adamson L, Powers J, Graves A. Conducting Substudies in a Longitudinal
11 Research Project. *International Journal of Multiple Research Approaches.* 2007 Dec
12 2007;1(2):187-98.
- 13 33. Brown W, Bryson L, Byles JE, Dobson AJ, C. L, Mishra G, et al. Women's Health Australia:
14 recruitment for a national longitudinal cohort study. *Women's Health* 1998;28(23-40).
- 15 34. Brown WJ, L. B, Byles JE, Dobson AJ, L. M, Schofield M, et al. Women's Health Australia:
16 Establishment of the Australian Longitudinal Study On Women's Health. *Journal of Women's*
17 *Health.* 1996;5(5):467-72.
- 18 35. Lee C, Dobson AJ, Brown WJ, Bryson L, Byles J, Warner-Smith P, et al. Cohort profile: the
19 Australian Longitudinal Study on Women's Health. *International Journal of Epidemiology.*
20 2005;34(987-991).
- 21 36. Reilly N, Harris S, Loxton D, Chojenta C, Forder P, Milgrom J, et al. Disparities in reported
22 psychosocial assessment across public and private maternity settings: a national survey of women
23 in Australia. *BMC Public Health.* 2013;13:632.
- 24 37. ABS. ABS Population Survey 1989-1990 National Health Survey Users Guide. Canberra (ACT):
25 Australian Bureau of Statistics; 1991.

- 1 38. Keane MC, Roeger LS, Allison S, Reed RL. e-Mental health in South Australia: impact of age,
2 gender and region of residence. Australian Journal of Primary Health. 2013;19(4):331-5.
- 3 39. beyondblue. Emotional Health During Pregnancy and Early Parenthood. [cited; Available from:
4 [http://www.beyondblue.org.au/resources/for-me/pregnancy-and-early-parenthood/emotional-
6 health](http://www.beyondblue.org.au/resources/for-me/pregnancy-and-early-parenthood/emotional-
5 health)
- 6 40. Flynn HA, Blow FC, Marcus SM. Rates and predictors of depression treatment among pregnant
7 women in hospital-affiliated obstetrics practices. General Hospital Psychiatry. 2006;28(4):289-95.
- 8 41. Smith MV, Shao L, Howell H, Wang H, Poschman K, Yonkers KA. Success of mental health
9 referral among pregnant and postpartum women with psychiatric distress. General Hospital
10 Psychiatry. 2009;31(2):155-62.
- 11 42. Buist A, Speelman C, Hayes B, Reay R, Milgrom J, Meyer D, et al. Impact of education on
12 women with perinatal depression. Journal of Psychosomatic Obstetrics & Gynecology. 2007
13 Mar;28(1):49-54.
- 14 43. Sealy P, Fraser J, Simpson J, Evans M, Hartford A. Community awareness of postpartum
15 depression. J Obstet Gynecol Neonatal Nurs 2009;38:121-33.
- 16 44. IBM Corp. IBM SPSS Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp; Released
17 2012.
- 18 45. Rowe HJ, Holton S, Fisher JRW. Postpartum emotional support: a qualitative study of women's
19 and men's anticipated needs and preferred sources. Australian Journal of Primary Health.
20 2013;19(1):46-52.
- 21 46. Buist A, Bilszta J. The beyondblue National Postnatal Depression Program, Prevention and Early
22 Intervention 2001-2005, Final Report. Volume 1: National Screening Program. beyondblue: the
23 national depression initiative. 2006.
- 24 47. beyondblue. National Action Plan for Perinatal Mental Health 2008 [cited; Available from:
25 [http://www.beyondblue.org.au/about-us/programs/perinatal-program-beyond-babyblues/national-
action-plan-2007](http://www.beyondblue.org.au/about-us/programs/perinatal-program-beyond-babyblues/national-
26 action-plan-2007)

- 1 48. Australian Government Department of Health and Ageing. Better Access to Psychiatrists,
2 Psychologists and General Practitioners through the MBS. [cited Accessed 29 October 2013];
3 Available from: <http://www.health.gov.au/internet/main/publishing.nsf/Content/mental-ba>
- 4 49. Ftanou M, Bassilios B, Fletcher J, King K, Kohn F, Blashki G, et al. Third report of the Perinatal
5 Depression Initiative: Consumers, their treatment and outcomes: Centre for Health Policy,
6 Programs and Economics, University of Melbourne; 2011.
- 7 50. Jones CJ, Creedy DK, Gamble JA. Australian midwives' attitudes towards care for women with
8 emotional distress. *Midwifery*. 2012;28(2):216-21.
- 9 51. Mollart L, Newing C, Foureur M. Midwives' emotional wellbeing: Impact of conducting a
10 Structured Antenatal Psychosocial Assessment (SAPSA). *Women and Birth*. 2009;22(3):82-8.
- 11 52. Fisher J, Chatham E, Haseler S, McGaw B, Thompson J. Uneven implementation of the National
12 Perinatal Depression Initiative: findings from a survey of Australian women's hospitals.
13 *Australian and New Zealand Journal of Obstetrics and Gynaecology*. 2012;52(6):559-64.
- 14 53. Hight NJ. Depression in the perinatal period: awareness, attitudes and knowledge in the
15 Australian population. *Australian and New Zealand Journal of Psychiatry*. 2011;45(3):223-31.
- 16 54. Mrazek PJ, Haggerty RJ. Reducing the risks for mental disorders: frontiers for preventative
17 intervention research. Washington, D.C.: National Academy Press; 1994.
- 18 55. Rickwood D. Pathways of Recovery: 4As Framework for Preventing Further Episodes of Mental
19 Illness. Canberra: Commonwealth of Australia; 2006.
- 20 56. Dennis C-L, Chung-Lee L. Postpartum Depression Help-Seeking Barriers and Maternal
21 Treatment Preferences: A Qualitative Systematic Review. *Birth*. 2006;33(4):323-31.
- 22 57. Jaspers M, de Meer G, Verhulst FC, Ormel J, Reijneveld SA. Limited validity of parental recall
23 on pregnancy, birth, and early childhood at child age 10 years. *Journal of Clinical Epidemiology*.
24 2010;63(2):185-91.
- 25 58. Yawn BP, Suman VJ, Jacobsen SJ. Maternal Recall of Distant Pregnancy Events. *Journal of*
26 *Clinical Epidemiology*. 1998;51(5):399-405.

- 1 59. Australian Bureau of Statistics. Customised report. 2006-2011 Population Census. ABS,
2 Canberra. 2010.
- 3 60. Australian Institute of Health and Welfare. National Perinatal Data Collection (unpublished)
4 AIHW, Canberra. 2008.
- 5 61. Fisher J, Tran TD, Nguyen TT, Tran T. Common perinatal mental disorders and alcohol
6 dependence in men in northern Viet Nam. *Journal of Affective Disorders*. 2012;140(1):97-101.
- 7 62. Paulden M, Palmer S, Hewitt C, Gilbody S. Screening for postnatal depression in primary care:
8 cost effectiveness analysis. *BMJ*. 2009;339:b5203.
- 9 63. WHO. Draft Comprehensive Mental Health Action Plan 2013–2020: Report by the Secretariat.
10 Sixty-sixth World Health Assembly. A66/10 Rev.1. Provisional agenda item 13.3,. Geneva:
11 World Health Organization; 16 May 2013.
- 12 64. Department of Health and Aged Care (GISCA). Measuring remoteness: Accessibility/Remoteness
13 Index of Australia (ARIA) Revised. Canberra: Department of Health and Aged Care; 2001.
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1 **Table 1. Socio-demographic characteristics of women who experienced significant emotional**
 2 **distress in the perinatal period (N=590)^**

Characteristic	n [%]
Age (years)	M=34.8 (SD=1.4)
Partner status^a	
Partner	553 [93.7]
No Partner	33 [5.6]
Missing/not stated	4 [0.7]
Number of previous children	
None	139 [23.6]
One or more	451 [76.4]
Income management^b	
Not difficult	304 [51.5]
Difficult	282 [47.8]
Missing/not stated	4 [0.7]
Highest level of education	
University degree	333 [56.4]
Yr 12/Trade/ diploma	228 [38.6]
Year 10 or below	24 [4.2]
Missing/not stated	4 [0.7]
Area of residence^c	
Urban	327 [55.4]
Non-urban	263 [44.6]
Background language^d	
English	556 [94.2]
Non-English speaking	30 [5.1]
Missing/not stated	4 [0.7]
Employment status^e	
Employed	412 [69.8]
Not employed	176 [29.8]
Missing/not stated	2 [0.3]
Hospital sector (index child)	
Private	291 [49.3]
Public ^f	278 [47.1]
Other	11 [1.9]
Missing/not stated	10 [1.7]
Infant age (months)^g	M=24.2 [SD=10.7]

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^Experienced significant emotional distress during the antenatal period only (N=174), postnatal period only (N=191), or both (N=225); ^a Partner: ‘Married’ or ‘De facto’; No Partner: ‘Never married’, ‘single’, ‘widowed’, ‘divorced’, or ‘separated’; ^b Respondents were asked to indicate how they managed on their available income: item re-coded so that a zero score (‘not difficult’) included responses of ‘not too bad’ or ‘easy’, and a score of one (‘difficult’) indicated that income management was reported as ‘difficult some of the time’, ‘difficult all of the time’ or ‘impossible’; ^c Based on the Accessibility/Remoteness Index of Australia score., re-coded as ‘urban’ (major city) or ‘non-urban’ (regional or remote)⁶⁴; ^d As reported at ALSWH 1973-1978 Cohort Survey 1 (1996); ^e Employment status at the time of the birth of the index child: item re-coded into two categories: ‘employed’ (full-time/part-time/casual) and ‘not employed’ (looking for work/not in paid workforce); ^f Public (public hospital and birthing centre); private (private hospital and private patient at a public hospital); ^gat survey completion.

1 **Table 2. Level of assessment and help seeking behaviours for women who experienced significant**
 2 **emotional distress in the perinatal period (total N=590)[^]**

	Antenatal Total N=398 N [%]	Postnatal^a Total N=380 N [%]
Level of assessment		
Assessment with referral	103 (25.9)	121 (31.8)
Assessment without referral	213 (53.5)	202 (53.2)
No assessment or referral	82 (20.6)	57 (15.0)
Help seeking behaviours		
Any formal health treatment ^b	187 [47.0]	238 [62.6]
Mental health professional	83 [20.9]	115 [30.3]
General Practitioner	109 [27.4]	162 [42.6]
Midwife (pregnancy) / Child Health Nurse (postnatal)	85 [24.1]	120 [31.6]
Medication	61 [15.3]	96 [25.3]
Day stay or residential parenting service	n.a.	47 [12.4]
Hospital admission or emergency department presentation	16 [4.0]	17 [4.5]
Phone help line or internet	43 [10.8]	68 [17.9]
Partner / family / social networks	341 [85.7]	343 [90.3]

3 [^] Experienced significant emotional distress during the antenatal period only (N=174), postnatal period only
 4 (N=191), or both (N=225); ^a 0-12 months following birth; ^b Refers to services provided by a mental health
 5 professional, GP and/or midwife / child health nurse, hospital admission or emergency department presentation, day
 6 stay or residential parenting service (postnatal only) and/or medication use. Note: respondents may have received
 7 more than one type of treatment — hence % totals more than 100%

1 **Table 3. Association of assessment of current and/or past mental health, with or without referral, on help seeking for emotional issues**
 2 **during the antenatal period among women who reported experiencing significant emotional distress, by help seeking category**

		Antenatal (N=398)				
Category of help seeking (outcome)	Level of assessment	Observed	Unadjusted		Adjusted	
		N [%]	OR [95% CI]	p-value	OR [95% CI] ^a	p-value
Any formal health treatment^b	Assessment with referral	78 [75.7]	1		1	
	Assessment without referral	92 [43.2]	0.24 [0.14,0.46]	<.001	0.26 [0.15,0.45]	<.001
	Not assessed	17 [20.7]	0.08 [0.04,0.17]	<.001	0.09 [0.04,0.24]	<.001
Mental health professional^c	Assessment with referral	51 [49.5]	1		1	
	Assessment without referral	26 [12.2]	0.14 [0.08,0.25]	<.001	0.15 [0.08,0.26]	<.001
	Not assessed	6 [7.3]	0.08 [0.03,0.20]	<.001	0.10 [0.04,0.24]	<.001
General Practitioner	Assessment with referral	52 [50.5]	1		1	
	Assessment without referral	51 [23.9]	0.31 [0.19,0.51]	<.001	0.28 [0.17,0.48]	<.001
	Not assessed	6 [7.3]	0.07 [0.03,0.19]	<.001	0.07 [0.03,0.20]	<.001
Midwife	Assessment with referral	31 [30.1]	1		1	
	Assessment without referral	49 [23.0]	0.69 [0.41,1.18]	.175	0.70 [0.40,1.23]	.217
	Not assessed	5 [6.1]	0.15 [0.06,0.41]	.001	0.17 [0.06,0.48]	.001
Partner/family/social networks	Assessment with referral	92 [89.3]	1			

	Assessment without referral	178 [83.6]	0.61 [0.30,1.25]	.177	-	-
	Not assessed	71 [86.6]	0.77 [0.32,1.88]	.569	-	-
Phone help line / internet	Assessment with referral	16 [15.5]	1			
	Assessment without referral	20 [9.4]	0.56 [0.28,1.14]	.110	-	-
	Not assessed	7 [8.5]	0.51 [0.20,1.30]	.157	-	-

1 ^aAdjusted for sociodemographics, receipt of perinatal mental health information during pregnancy, perceived support to seek help for emotional health issues,
2 previous help seeking for mental health issues (not related to the index pregnancy). Information for 'previous help seeking' was drawn from ALSWH Young
3 Main Surveys 1-5 [1996 -2009]); ^b Refers to services provided by a mental health professional, GP and/or midwife / child health nurse, hospital admission or
4 emergency department presentation and/or medication use; ^c e.g., counsellor, psychologist, psychiatrist.

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1 **Table 4. Association between assessment of current and/or past mental health, with or without referral, on help seeking for emotional**
 2 **issues during the postnatal period among women who reported experiencing significant emotional distress, by help seeking category**

		Postnatal (N=380)				
Category of help seeking (outcome)	Level of assessment	Observed N [%]	Unadjusted OR [95% CI]	p-value	Adjusted OR [95% CI] ^a	p-value
Any formal health treatment^b	Assessment with referral	109 [90.1]	1		1	
	Assessment without referral	110 [54.5]	0.13 [0.07,0.25]	<.001	0.14 [0.07,0.27]	<.001
	Not assessed	19 [33.3]	0.06 [0.02,0.12]	<.001	0.07 [0.02,0.13]	<.001
Mental health professional^c	Assessment with referral	79 [65.3]	1		1	
	Assessment without referral	31 [15.3]	0.10 [0.06,0.17]	<.001	0.10 [0.06,0.18]	<.001
	Not assessed	5 [8.8]	0.05 [0.20,0.14]	<.001	0.06 [0.02,0.16]	<.001
General Practitioner	Assessment with referral	88 [72.7]	1		1	
	Assessment without referral	63 [31.2]	0.17 [0.10,0.28]	<.001	0.18 [0.11,0.30]	<.001
	Not assessed	11 [19.3]	0.09 [0.04,0.19]	<.001	0.08 [0.04,0.18]	<.001
Child health nurse	Assessment with referral	65 [53.7]	1		1	
	Assessment without referral	50 [24.8]	0.28 [0.18,0.46]	<.001	0.28 [0.17,0.46]	<.001
	Not assessed	5 [8.8]	0.08 [0.03,0.22]	<.001	0.08 [0.03,0.21]	<.001
Partner/family/social networks	Assessment with referral	113 [93.4]	1			
	Assessment without referral	181 [89.6]	0.61 [0.26,1.42]	.253	-	-
	Not assessed	49 [86.0]	0.43 [0.15,1.22]	.114	-	-

Phone help line / internet	Assessment with referral	36 [29.8]	1		1	
	Assessment without referral	27 [13.4]	0.36 [0.21,0.64]	<.001	0.36 [0.21,0.64]	<.001
	Not assessed	5 [8.8]	0.23 [0.08,0.62]	.004	0.23 [0.08,0.62]	.004

1 ^aAdjusted for sociodemographics, receipt of perinatal mental health information 0-12 months following birth, perceived support to seek help for emotional health
2 issues, formal help seeking for emotional issues during the index pregnancy and previous help seeking for mental health issues (not related to the index
3 pregnancy); Information for ‘previous help seeking’ was drawn from ALSWH Young Main Surveys 1-5 [1996 -2009]); ^bRefers to services provided by a mental
4 health professional, GP and/or midwife / child health nurse, hospital admission or emergency department presentation, day stay or residential parenting service
5 and/or medication use; ^ce.g., counsellor, psychologist, psychiatrist.

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