Ann Ist Super Sanità 2021 | Vol. 57, No. 1: 40-50
DOI: 10.4415/ANN_21_01_07

An Australian perspective on treating perinatal depression and anxiety: a brief review of efficacy and evidence-based practice in screening, psychosocial assessment and management

Yafit Hirshler[1], Alan W. Gemmill[1] and Jeannette Milgrom[1,2]

[1]Parent-Infant Research Institute, Austin Health, Heidelberg Heights, Victoria, Australia
[2]Melbourne School of Psychological Sciences, University of Melbourne, Melbourne, Victoria, Australia

Abstract
Australia is at the forefront of developing screening practices, interventions and national public health policy for perinatal women with depression and anxiety. For the last two decades Australian mental health experts and public health administrators have conducted population-wide feasibility studies on screening and incorporated these in national guidelines. This chapter outlines the wider evidence base supporting current Australian practice. Key recommendations include use of the Edinburgh Postnatal Depression Scale or the Patient Health Questionnaire-9 early in pregnancy and at 6-12 weeks postpartum, followed by psychosocial assessment. Positive depression screens need to be followed by diagnostic assessment, and clear treatment pathways must be available. Milgrom and colleagues' cognitive behavioural treatment is the only Australian program with a solid evidence base demonstrating its effectiveness for depression and associated anxiety. The face-to-face treatment has been further developed into an online program, MumMoodBooster, funded by the Federal government and available to Australian women.

Key words
- perinatal
- depression
- anxiety
- screening
- treatment

HISTORY OF SCREENING POLICY IN AUSTRALIA

Maternal mental health has increasingly gained public and scientific focus in Australia. A major catalyst was the foundation of beyondblue, an independent, not-for-profit national depression initiative funded by the Commonwealth and Victorian State governments, in 2000. Beyondblue brought together perinatal mental health experts in each State and established the National Postnatal Depression Program (NPDP: 2001-2005). This feasibility study, which aimed at implementing screening and early intervention programs for antenatal and postnatal depression, involved 40,000 women during pregnancy and 120,000 women postnatally as well as training of health professionals across 8 states over 5 years [1].

The demonstration of effective screening practices culminated in a National Action Plan recognising the perinatal mental health needs in Australia at that time [2]. Grounded on the principles of health promotion, prevention and early intervention, the new Plan formulated recommendations around the resources and structures (both at policy and operational level) essential for implementation of depression screening, psychosocial assessment, training and workforce development for healthcare professionals, and the provision of quality pathways to care. The release of the National Action Plan led to a commitment of $85 million by the Australian government for the establishment of the National Perinatal Depression Initiative (NPDI; 2008-2015). Extensive work, including public health initiatives, research, strategic planning, advocacy and government investment, has been undertaken under the umbrella of this Initiative.

Importantly, the NPDI supported the development of the first Australian Clinical Practice Guidelines for Depression and Related Disorders in the Perinatal Period [3]. Backed by a comprehensive systematic literature review and expert consensus, these Guidelines played a key role in guiding best practice for identifying

Address for correspondence: Jeannette Milgrom, Parent-Infant Research Institute, Department of Clinical & Health Psychology, Heidelberg Repatriation Hospital, Austin Health, 300 Waterdale Road, Heidelberg Heights, Victoria 3081, Australia. E-mail: Jeannette.MILGROM@austin.org.au.

perinatal depression, with recommendations for universal screening and pathways to care to reduce maternal mental health morbidity. In 2017, these guidelines were updated to reflect the advances in research and innovation and to broaden the scope to include assessment of risk factors and additional perinatal mental health conditions [4].

Treatment of a range of perinatal mental health conditions has been facilitated by Australia's universal health insurance scheme, Medicare, which provides access to universal medical care and subsidized sessions for psychological and psychiatric services for all perinatal women with a depression diagnosis.

SCREENING FOR DEPRESSION AND ANXIETY - GENERAL CONSIDERATIONS

Universal screening tools

Routinely asking women about their mental health, often with the use of a screening tool, can help identify women who would not ask for help spontaneously due to various reasons, including stigma, denial and lack of knowledge [5]. Opportunistic screening for postnatal depression based on clinical judgment alone has been demonstrated to miss many depression cases [6]. Routine, universal postnatal depression screening using validated tools, on the other hand, has been shown to increase rates of diagnosis and therapy initiation [7]. This may be attributed, at least partially, to routine screening being highly accepted by women [8] and refused only by few women [7]. This evidence supports the importance of routine, universal screening for perinatal depression which has become policy in Australia [4]. Furthermore, evidence from Australian screening research suggests that even when positive screening results do not lead to a diagnosis of depression, they often indicate the presence of other mental health conditions [9].

There are multiple universal tools available for screening for perinatal depression, including generic and perinatal-specific tools (see a review [10] and a comprehensive text by Milgrom and Gemmill [11]), and several considerations should be made when selecting the appropriate tool. A brief, self-administered tool is often favourable in perinatal settings where limited time is available for screening by health professionals. Of utmost consideration is the tool's sensitivity and specificity which indicate the tool's ability to identify all true cases and non-cases. Sensitivities of postnatal depression screening instruments vary largely and are highly dependent on the cutoff values by which an "elevated" or "positive" score is determined. Specificities of the various screening tools also range widely, with lower cutoff scores associated with lower specificities. Whether a tool is available in other languages and has been validated across several ethnic populations could also be of importance if to be used in women with linguistically and culturally diverse backgrounds (for example [12]).

Two widely used validated screening tools are the Edinburgh Postnatal Depression Scale (EPDS; [13]) and the Patient Health Questionnaire-9 (PHQ-9; [14]). The EPDS is a brief, self-administered tool. An EPDS cutoff value of 13 is commonly applied and has sensitivities of ~80% and specificities of ~87% for depression, although values vary depending on characteristics of the sample. Lower cutoffs have been used at times for population screening with sensitivities close to 100% but resulting in more false positives [15]. The PHQ-9 also has the advantage of being a brief, self-administered instrument. Studies validating the tool with a cutoff value of 10 have reported sensitivity and specificity of 75% and 91% for postnatal depression [16] and 85% and 84% for antenatal depression [17]. The PHQ-9 has been used as both a primary screening tool and as a confirmatory test for women identified as possibly depressed by the EPDS (>10) [18]. Being sensitive to changes in depression severity (including for postnatal depression), the PHQ-9 is also suitable for assessing response to therapy [18]. In addition, PHQ-9 baseline depression severity can assist clinicians in selecting the appropriate treatment [19] and in facilitating follow-up management, particularly in primary care setting [18].

As maternal suicide and infanticide are two of the most severe adverse consequences of postnatal depression [20], it is of utmost importance to recognise and evaluate thoughts of self-harm and infant harm during depression screening. Both the EPDS and the PHQ-9 can be used to identify maternal suicide as they have embedded questions related to self-harm or suicidal ideation [13, 14], however, neither asks directly about risk of harm to the infant.

An alternative method for the multi-item self-report screening tools, is the use of ultra-brief case-finding questions as a first-step approach. The PHQ-2 [21], a shortened two-item version of the PHQ-9, can be administered initially and if scored high should always be followed by administration of the PHQ-9 [16]. The PHQ-2 has a sensitivity of 84% and a specificity of 79% for the detection of postnatal depression [16]. The "Whooley questions" comprise a 2-item tool derived from the PHQ-2 with a timeframe of 4 rather than 2 weeks and scored only as yes/no responses [22, 23]. The Whooley questions have been reported to have a sensitivity of 100% and a specificity of 65-68% in identifying depression in antenatal and postnatal women [23]. Among screen positive women, a third question is used in some settings, asking women if they desire help for their symptoms and has been reported to reduce sensitivity to 39-58% and increase specificity to 91-100% [23]. The National Institute for Health and Care Excellence (NICE) guidelines recommend to initially administer the Whooley questions, and if one of these questions is answered positively it should be followed by either the EPDS or the PHQ-9 [24]. A recent study by Howard and colleagues [25] has shown that when routinely asked in early pregnancy, the Whooley questions had sensitivity of 41% and specificity of 95% and was useful as a case-finding tool as part of a general discussion about health. Further assessment was needed as positive responses suggested that women may have a mental health disorder (not necessarily depression).

Anxiety is often co-morbid with depression and can often have a major impact on functioning. Screening tools for perinatal anxiety have a more limited evidence base and therefore the Australian guidelines recommend to screen for anxiety based on clinical judgment

[4]. In the United States, the Women's Preventive Services Initiative has recently released a recommendation to screen all women above 13 years of age for anxiety, including perinatal women [26]. The Generalized Anxiety Disorder-7 (GAD-7; [27]) screening tool was found to be useful for identifying GAD during and after pregnancy [28]. An abbreviated version of the GAD-7, the GAD-2, is also available [29] and is recommended by the NICE guidelines to be administered initially and followed by GAD-7 if necessary [24]. A subset of the EPDS, items 3-5, have also been used for initial anxiety screening and require further assessment [30]. Perinatal specific anxiety tools have also generated interest due to the specific stressors associated with pregnancy and the postpartum [11].

To summarize, it is currently recommended that screening for depression in the perinatal period will be conducted by administering either the EPDS using a cutoff score of 13 or the PHQ-9 using a cutoff score of 10. Both are brief, self-administered instruments that also assess for suicidal ideation and are readily available in the public domain. In addition, both tools have been validated in several languages. The PHQ-9 is also useful when monitoring response to postnatal depression therapy is of interest. Two- or three-question screeners, such as the PHQ-2 or the Whooley questions, can be administered even more rapidly and with high sensitivity, but may not be as specific for identification of depression per se and may yield higher numbers of false positive. When a positive response to these screeners is obtained, it is recommended that these brief tools are accompanied by a more comprehensive tool such as the EPDS, PHQ-9 or a diagnostic assessment. Screening tools for perinatal anxiety require further investigation prior to recommendations for widespread use.

Settings required for screening

Screening necessitates specific settings to ensure it is conducted in an effective and a respectful manner to support high-risk women through their journey towards treatment and remission. Several considerations need to be made in regard to who should screen, and where and when screening should occur. Screening should be undertaken only by health professionals who have appropriate training and skills. In Australia, despite recommendations for universal screening having been in place for over a decade, only 69% of midwives report ever screening for postnatal depression [31]. In addition to time constraints, one of the causes of this relatively low screening rate could be due to health professionals feeling uncomfortable asking women about depression and may be concerned that some women will even react negatively [32]. Increasing health professionals' willingness to screen and their comfort with the screening tool are therefore essential components of screening training programs. Although training for screening is well integrated into routine practice and is accessible, particularly at the level of "basic knowledge", there are still areas where training has not been comprehensive. Whilst increasing identification rates is the key goal, focus should be given also to minimizing potential harms connected with screening, such as misdiagnosis, labelling and stigma. Therefore, training programs should be designed not only to educate health professionals on how to use the appropriate screening tools but also to support them in developing communication skills that will allow them to administer these tests in a women-centred and culturally safe manner [33].

An appropriate screening site would be one that women are likely to attend as part of their scheduled antenatal, postnatal or home visits. In addition, screening site should also offer services beyond screening, i.e. evaluation, treatment, follow-up and monitoring [7, 18]. Studies have shown that less than 50% of women with elevated screening scores who are referred for further evaluation or treatment actually follow that referral through (for example [34, 35]). Offering on-site follow-up services for diagnosis or treatment may increase the site's ability to improve outcomes [7, 18]. However, barriers to full implementation still exist even for sites that offer continuity of care. These barriers include time pressures, inadequate funding, absence of referral resources for complex cases and lack of training [36]. One way to overcome some of these barriers is by electronic screening (e-screening) such as the Australian e-screening platform iCOPE, which allows women to complete the self-report tools on a mobile device or tablet [37]. Innovations such as coupling e-screening with clinician decision support systems and production of electronic management reports are currently being trialled in Australia with a system called the Perinatal Identification, Referral and Integrated Management for Improving Depression (PIRIMID system). Postnatal depression screening in sites outside of health care facilities, perhaps even self-screening, may be necessary for 3%-15% of women in industrialized countries (higher rates in developing countries) who do not attend postpartum visits [6].

The optimal timing for screening during pregnancy and postnatally is yet to be determined. The times available for screening during pregnancy depend largely on the woman's timing of seeking antenatal care and the timing of the delivery. Whilst screening at any stage throughout pregnancy may detect prevalent depression and anxiety, screening at 34 to 36 weeks could also point to a risk of developing postnatal depression [38]. However, postpartum screening before women are discharged from the hospital post-delivery for depression as early as 24 to 48 hours postpartum has a limited ability to predict continued depressive symptoms due to high rates of false positive screens caused by 'baby blues' and the physical and emotional upheaval associated with a complex delivery or unexpected outcome. Early post hospital screening, at 5 days postpartum, had lower specificity and sensitivity in comparison with screening at 6 weeks after delivery [39]. When evaluated at 6, 8 and 12 weeks postpartum, the effectiveness of screening in identifying women at increased risk for prolonged postnatal depression was comparable [40]. Therefore, screening at these times which are part of the health care visits schedule (e.g. routine 6-8-week postpartum visit) may be done effectively by taking advantage of current health care delivery patterns. In terms of re-screening, a study by Yawn and colleagues

has demonstrated that screening at 6 and 12 months postpartum may identify additional women at risk that were screened negative at 4 to 12 weeks postpartum [41]. With respect to the optimal timing of anxiety screening in the perinatal period, due to lack of studies no evidence-based recommendations can be made. However, from a pragmatic point of view, it seems most efficient for anxiety screening and depression screening to coincide.

To summarize, it is currently recommended that screening will be conducted by health professionals who have received training in woman-centred communication skills and culturally safe care and are comfortable with screening. Screening should be completed at a place that is convenient for women and that offers follow-up services, especially provision or referral to evidence-based treatments. In terms of timing, it is currently recommended that the first antenatal screening will be completed as early as practical in pregnancy and will be repeated at least once later in pregnancy. Evidence supports first postnatal screening at 6 to 12 weeks postpartum and re-screening at 6 to 12 months postpartum. No evidence currently exists in regard to the optimal timing of anxiety screening, but if such screening becomes policy, concurrent screening for depression and anxiety seems most practical until evidence emerges.

Interpretation of screening results and referral for further assessment

When an EPDS score between 10 and 12 is obtained, recommendations often suggest that the EPDS should be repeated within 2-4 weeks [4]. A similar re-screening is suggested for PHQ-9 scores between 5 and 9 [42]. Elevated screening scores (EPDS ≥13; PHQ-9>10) should be followed by a diagnostic assessment and a suitable follow-up. A positive score on the suicidal ideation item (EPDS question 10; PHQ-9 question 9) or a very high total score may indicate the woman is at risk of harming herself and/or her child, and therefore must be immediately followed by risk assessment. If suicidal ideation is indicated in the risk assessment, an urgent action should be taken in accordance with local protocol/policy [4].

In a small percentage of women, high depression and anxiety screening scores could be a manifestation of a general medical condition, such as hypothyroidism, hyperthyroidism [43] and anaemia [44] or other psychosocial conditions, including baby blues, problems with managing marital relationship and poor social support amongst others [45]. Thus, in some women with positive depression or anxiety screening diagnostic assessment should be accompanied by a thorough medical and psychosocial evaluation.

There is an ongoing debate in regard to what is considered an adequate diagnostic assessment for a positive screening score. Whilst some health professionals argue that positive screening results require a standardized diagnostic interview by a trained mental health professional [46], this can prove impractical given the need to evaluate 15-25% of pregnant women and shortage of mental health professionals [47]. Limited but growing evidence supports an alternative approach by which a diagnostic assessment can be carried out in primary settings by a clinician trained in the diagnosis and management of depression [7, 48, 49]. The assessment must include an evaluation of symptoms severity and duration and whether the symptoms impact the woman's ability to function in her usual roles. Evaluation of other signs of mental health disorders such as bipolar disorders, psychotic disorders (including postpartum psychosis), anxiety disorders and substance use disorders must also be considered [20]. Women with unusual presentations, history of serious mental health problems and depression resistant to therapies available in the primary setting deserve a referral to a mental health professional [7, 18].

When a diagnosis such as postnatal depression is made, a crucial step in seeking help would be engaging the woman and, if possible, members of her support network in a discussion concerning her depression and help seeking [50]. Patient engagement is also important for initiation and adherence to therapy and participation in follow-up and monitoring visits or phone calls [7, 51].

In summary, it is currently recommended that for a woman with an EPDS score between 10 to 12 or with a PHQ-9 score between 5 to 9, screening should be repeated, for instance within 2-4 weeks. Women with an EPDS score of 13 or more or with a PHQ-9 score of 10 or more should be referred to a diagnostic assessment for depression. Women who are scored positive on EPDS Question 10 or on the PHQ-9 Question 9 should undergo immediate risk assessment, and if there is any disclosure of suicidal ideation, an urgent action should be taken in accordance with local protocol/policy.

ASSESSING BEYOND DEPRESSION - PSYCHOSOCIAL ASSESSMENT

Identifying psychosocial risk factors

It is now recognised that perinatal mental health is multifaceted and is much broader than the simple diagnosis of postnatal or antenatal depression. Whilst major depression is the most common perinatal mental health condition, for some women increased psychological vulnerability during the perinatal period may give rise to new onset psychiatric episodes or relapse of pre-existing psychiatric episodes (often due to discontinuation of medication in pregnancy) other than major depression, for example, puerperal psychoses [52] and bipolar disorder [53, 54]. Furthermore, in women presenting depressive symptoms, symptoms can be an indicator of distress triggered by complex and serious psychosocial co-morbidities and adverse circumstances, such as interpersonal violence, substance use and a history of adverse childhood experiences. When major depression is diagnosed, addressing these co-morbidities is essential for the depression to respond well to the usual treatment modalities [55]. The implications of such complex cases going undetected and untreated can be devastating. Psychosocial illness (including substance use and interpersonal violence) has been found to be one of the leading causes of maternal deaths in higher income countries [56, 57]. Furthermore, admission for a severe

psychiatric episode in the first postnatal year leads to 70-fold increase in the risk of suicide compared to at other times in her life [58]. These complex cases may also have deleterious impact on the infant [59]. Hence, identifying the presence of psychosocial factors which may increase a woman's vulnerability to experience perinatal mental health morbidity and thereby providing them with the most suitable care, is crucial.

Several key risk factors for poor perinatal mental health have been identified with the most consistently reported being a past history of a mental health condition, including major depression and anxiety disorder [33, 60-61]. Other major, consistently reported risk factors for postnatal depression include antenatal depression symptoms, antenatal anxiety, major stressful life events, lack of practical/emotional support and poor partner support [61]. Considerable evidence supports the association with additional characteristics such as poor marital relationship including interpersonal violence, a history of childhood trauma, isolation (physical, mental, cultural), substance use and long-standing personality vulnerabilities [33, 62-65].

Evaluation of current and longstanding psychological, social, and cultural risk factors is the essence of psychosocial assessment programs [66]. Research shows that enquiring about women's emotional health is an essential step towards seeking formal mental health care in the perinatal period [67]. The Australian guidelines note the use of universal psychosocial assessment as a good practice point and recommends assessing for psychosocial factors as early as practical in pregnancy and at 6-12 weeks after birth. In addition, the Australian guidelines note enquiring about the woman's emotional wellbeing at every antenatal or postnatal visit as a good practice point [4]. Similarly, the NICE guidelines advocate a broad psychosocial assessment approach [24]. The value of psychosocial assessment lies in the opportunity it provides for raising awareness and educating women and families as well as 'starting the conversation' around psychosocial risk factors. In addition, this provides an opportunity to locate supports as protective factors to assist in the prevention of mental health problems. Research has shown that asking about the women's past and/or current mental health led to higher rates of referrals [68].

Psychosocial assessment methods

Different approaches can be adopted to effectively undertake psychosocial assessment in primary settings. These approaches range from the use of psychosocial assessment tools, either self-report or clinician administered, to a general unstructured enquiry as part of holistic care. Structured questionnaires have the advantage of providing a comprehensive, brief overview of the woman's circumstances by covering key risk domains, thereby allowing to start the conversation to further explore particular domains as needed. Such tools could be especially useful for health professionals who are not experienced in undertaking a detailed psychosocial assessment as part of the broader interview. The Australian guidelines note ensuring health professionals receiving training in the importance of psychosocial assessment and use of a psychosocial assessment tool as a good practice point [4]. Several structured psychosocial assessment tools are available and include the Antenatal Psychosocial Health Assessment (ALPHA), Antenatal Risk Questionnaire (ANRQ), Predictive Index of PND, and the Antenatal Psychosocial Questionnaire [67]. A validated, user-friendly and acceptable psychosocial assessment tool or structured interview that is suited to the local primary care setting can facilitate a comprehensive assessment.

Interpretation of psychosocial assessment results and referral

Psychosocial risk factors identified through a structured tool or as part of a broader clinical interview need to be further explored and documented. It is recommended to undertake psychosocial assessment in conjugation with depression screening [4] and integrate them in care programs which also entail further mental health evaluation and management [69]. Interpretation of the results of the psychosocial assessment is determined by local decision-making rules in the context of the depression screening results [70]. Decision-making rules could be applied in the form of an algorithm which assists clinicians to determine through a multidisciplinary approach whether women have a mental health condition, including current possible depression. Alternatively, the use of a clinician decision support system such as the one currently being trialled in Australia (PIRIMID) allows health professionals to use clinical judgement in interpreting which risk factors should be addressed in a management plan and integrate this with other clinical information. This allows identifying women at high psychosocial risk and devising an appropriate care plan for them [71].

TREATMENT

Perinatal mental health care is a 3-stage process entailing screening and psychosocial assessment, referral, and treatment. An integrated approach that seamlessly links screening and psychosocial assessment results to a defined referral process and treatment can optimize treatment accessibility, completion, and response. This in turn will result in a more clinically and cost-effective means for managing perinatal depression and anxiety [72].

The next step following diagnosis of antenatal or postnatal depression would be selecting the appropriate treatment approach that is likely to result in remission of depressive symptoms and is available in the immediate region. Systematic reviews have confirmed the effectiveness of a range of treatment approaches for perinatal depression, including pharmacotherapy, cognitive behavioural therapy (CBT), counselling and interpersonal therapy (IPT) [73-76]. In comparison, treatment studies for perinatal anxiety have received relatively less attention. It is expected that treatments that are effective for anxiety at other life stages would also be effective for anxiety during the perinatal period, and there is evidence for CBT for perinatal anxiety [77], which is the best practice treatment for anxiety disorders in the general population. There is also evidence emerging

for e-Health interventions [78], and mindfulness-based interventions [79].

Pharmacotherapy

Some trials for postnatal depression have reported positive results whereas others have been more ambiguous [80, 81]. Nevertheless, it seems likely that the efficacy of antidepressant medications in depressed postnatal women would be similar to the efficacy of antidepressant medications observed in the general population, including non-postnatal women [82]. In addition, when comparing antidepressants with psychological treatment, there may be different relative benefits; for example, a more rapid effect of medication versus better relapse prevention for psychological treatment [83]. A meta-analysis of the overall evidence emerging from randomized controlled trials (RCTs) in postnatally depressed women suggests that it is not clear whether antidepressants are superior to psychotherapy, or whether some antidepressants are more effective or better tolerated than others [76].

During pregnancy and breastfeeding, before starting antidepressant treatment, the potential harmful effects on the developing fetus and on the infant need to be considered alongside the potential harm if the woman remains untreated or ceased medication [84]. The Australian guidelines outline specific considerations in the use and monitoring of the effects of pharmacological treatments drawing upon the NICE clinical guidelines. This includes consideration of the woman's past response to antidepressant treatment, obstetric history (e.g. other risk factors for miscarriage or preterm birth if pregnant) and any factors that may increase risk of adverse effects (e.g. when breastfeeding, considering the infant's health and gestational age at birth) before choosing a particular antidepressant [4].

Whilst the use of selective serotonin reuptake inhibitors (SSRIs) is often used in primary care as a first-line treatment for moderate to severe depression, this needs to be balanced with women's preferences and the known efficacy of psychological treatments for this group. For example, we know that the majority preference among perinatal women is to avoid such pharmacological treatments where possible [5].

Psychological approaches to treatment

Psychological treatment is a viable first-line of treatment for mild to moderately severe depression and an alternative for women who are pregnant or breastfeeding and therefore prefer not to take antidepressants. Previous evidence supports the efficacy of various psychological treatment approaches for maternal perinatal depression [73-75]. Although CBT and IPT are the most beneficial, IPT has a somewhat narrower evidence base in perinatal populations than CBT. The Australian guidelines note treatment with CBT and IPT for women with mild to moderate depression in the perinatal period as an evidence-based recommendation [4].

CBT – In Australia, Milgrom and colleagues have developed well-evaluated face-to-face and online CBT programs for perinatal depression. We have developed a 12-week group CBT program, Getting Ahead of Postnatal Depression, for postnatal depression [85] drawing upon the CBT content embodied in Lewinsohn's well-validated 'coping with depression course' [86] to accommodate unique needs of depressed mothers with new infants. Evaluated in two RCTs, the program was found to significantly ameliorate depressed mood and was superior to routine care [87] and effective to the same extent as pharmacotherapy with sertraline [88]. A modification of the Getting Ahead of Postnatal Depression program developed for antenatal women, Beating the Blues Before Birth, was also evaluated in a feasibility trial and an RCT and proved highly effective in reducing both depression and associated anxiety in pregnant women diagnosed with depression (80% with major depressive disorder) [89]. An antenatal self-help program also developed by us, Towards Parenthood, aimed at preventing early parenting and coping difficulties, and was found to be effective in an RCT [90]. Another postnatal depression treatment program (Overcoming Depression Program) developed for delivery by nurses working with general practitioners was trialled and showed promising results in reducing depressive symptoms [49].

Internet-based interventions have been increasingly used to address maternal depression and a range of psychological problems experienced by perinatal women [91]. The value of internet-based delivery of treatment programs lies in its potential to overcome major barriers to treatment uptake in perinatal populations, such as stigma and lack of reach of traditional services [5]. Being anonymous, accessible, affordable and convenient, internet-based depression programs have the potential to reach many women who otherwise would not access treatment.

Milgrom and colleagues have rigorously developed and evaluated an online CBT intervention for treating postnatal depression (MumMoodBooster;[92]). This innovative program was adapted from the face-to-face Getting Ahead of Postnatal Depression treatment program and the subject of extensive useability and feasibility trials. It was developed to mimic face-to-face treatment and has features which allow individual tailoring of the targets of intervention, using a range of features including host videos and feedback of progress. The effectiveness of this intervention was evaluated in an RCT comparing the online CBT treatment (n=21) to treatment as usual (n=22). At 3 months post-enrolment, a four-fold increase in remission was observed, as 79% of women in the intervention group no longer met the diagnostic criteria for depression compared to 18% of women in the treatment as usual group. Improvement in measures of depression, anxiety and stress was also more evident in the intervention group [93]. In another RCT the intervention was found to be at least as effective as face-to-face CBT at 6 months post-treatment (in preparation). In light of previous evidence indicating that guided support increases the effect size of self-guided internet interventions in the general population with depression [94], coaching support was offered to women in conjunction with MumMoodBooster to increase severely depressed women's adherence to treatment. An antenatal version of this

program, Mum2BMoodBooster, has also been developed and evaluated in a feasibility trial yielding promising results in regard to its effectiveness in reducing depression and anxiety symptoms in pregnant women (in preparation). MumMoodBooster, both the postnatal and the antenatal versions, are funded by the Federal government and available to all Australians through MumSpace. MumSpace is a digital platform developed by the Perinatal Depression e-Consortium with the aim to provide a stepped-care approach for prevention and early, self-help intervention to ameliorate perinatal depression and thereby reduce the burden on more traditional acute downstream services.

IPT – An Australian RCT evaluating the effectiveness of group IPT for postnatal depression has shown that group IPT yielded a greater improvement in depressive symptoms compared to treatment as usual at 3 months post-therapy [95]. In another study following these women up to 12 months post-therapy it has been shown that women in the IPT group were less likely to develop persistent depressive symptoms [96].

Combination therapy

Studies exploring the efficacy of combined psychological and pharmacological therapies for postnatal depression have reported little or no benefit. For example, in a study by Misri and colleagues [97] the effects of paroxetine both alone and combined with CBT were found to be comparable. Likewise, combination of sertraline with psychological therapy did not attract additional benefits in our Australian study or that of Bloch and colleagues [88, 98]. However, some women report that the adjunctive use of psychological treatments and pharmacotherapy can be helpful; for example, rapid relief of symptoms followed by greater availability to psychological treatment, usually once medications have become effective [4].

Mother-infant interventions

Symptoms of postnatal depression, including sadness, flatness and loss of interest, as well as symptoms of comorbid anxiety, can make it difficult for some depressed women to engage behaviourally and emotionally with their infants [99, 100]. Mother-infant interactions are complex and involve reciprocal micro behavioural exchanges between a sensitive and attuned mother and a developing infant that are vital for optimal infant development [101]. Depressed mothers are less likely to be responsive and sensitive to infant's cues, less engaged in affectionate physical contact, make less eye contact with their infants, and may be intrusive in their interactions [99]. Such dysfunctional mother-infant interactions have been shown to mediate the impact of postnatal depression on child development [99].

A number of studies have shown that effectively treating postnatal depression does not necessarily result in improved mother-infant relationships (for example [87]) and there is therefore a need for complemented interventions designed to target the mother-baby relationship (see a review [102]). In Australia, Milgrom and colleagues developed a brief, targeted mother-infant interaction intervention called 'Happiness Understanding Giving and Sharing' (HUGS [85, 103, 104]), which complements CBT treatment for maternal postnatal depression. A pilot study of HUGS showed rapid reductions in stress in the mother-infant dyad, which was a weekly rate of reduction that was three times larger than during earlier treatment for postnatal depression [103]. This was followed by an RCT comparing HUGS to a control playgroup following postnatal depression treatment, which showed significant improvements in both observed and parent-reported mother-infant interactions.

FUTURE DIRECTIONS

Over 300,000 women give birth in Australia each year and up to 20% experience clinical depression, often with severe anxiety, either in pregnancy or in the first postnatal year. Despite the substantial progress in screening and treatment implementation, low treatment uptake rates remain concerning. Future efforts require strategies to bridge the gap between cases identified by screening and the number of women receiving treatment resulting in remission from their depressive episode [11]. Furthermore, the harm through the continued non-identification and non-treatment of the majority of cases of perinatal depression underlines the continuing importance of increasing identification rates and providing adequate treatment for women experiencing perinatal depression and anxiety. From a societal and economic perspective, perinatal depression and anxiety in Australia incur an enormous burden mostly borne by children, which is estimated at $7.3 billion [105]. Taken together, identifying and treating perinatal depression and anxiety is crucial both at the individual and the societal levels. However, although screening for perinatal depression is policy in Australia, further efforts need to be made to implement screening into practice with available integrated treatments. Moreover, further RCTs are needed to form a strong evidence base that will guide every aspect of detection and management of perinatal depression and anxiety each separately as well as part of an integrated process.

Conflict of interest statement

The authors declare that they have no conflict of interest.

Submitted on invitation.
Accepted on 27 November 2020.

REFERENCES

1. Beyondblue. Final Report of the National Postnatal Depression Program, 2001- 2005. Melbourne: 2005.
2. The beyondblue Perinatal Mental Health Consortium. Perinatal Mental Health National Action Plan, 2008-2010, Full Report. Melbourne: beyondblue; 2008.
3. beyondblue. Australian Clinical Practice Guidelines: De-

pression and Related Disorders in the Perinatal Period. Melbourne, Australia: The National Depression Initiative; 2011.
4. Centre of Perinatal Excellence. Effective mental health care in the perinatal period: Australian Clinical Practice Guidelines; 2017.
5. Bilszta J, Ericksen J, Buist A, Milgrom J. Women's experiences of postnatal depression – beliefs and attitudes as barriers to care. Aust J Adv Nurs. 2010;27(3):44-54.
6. Georgiopoulos AM, Bryan TL, Wollan P, Yawn BP. Routine screening for postpartum depression. J Family Pract. 2001;50(2):117-22. doi: 10.1097/00006250-199905000-00004
7. Yawn BP, Olson AL, Bertram S, Pace W, Wollan P, Dietrich AJ. Postpartum depression: screening, diagnosis, and management programs 2000 through 2010. Depress Res Treat. 2012;2012. doi: 10.1155/2012/363964
8. El-Den S, O'Reilly CL, Chen TF. A systematic review on the acceptability of perinatal depression screening. J Affect Disord. 2015;188:284-303. doi: 10.1016/j.jad.2015.06.015
9. Milgrom J, Ericksen JE, Negri L, Gemmill AW. Screening for postnatal depression in routine primary care: Properties of the Edinburgh Postnatal Depression Scale in an Australian community. Aust NZ J Psychiatry. 2005;398:745-51. doi: 10.1080/j.1440-1614.2005.01660.x
10. Ukatu N, Clare CA, Brulja M. Postpartum Depression Screening Tools: A Review. Psychosomatics. 2018;59(3):211-9. https://doi.org/10.1016/j.psym.2017.11.005
11. Milgrom J, Gemmill, AW. Identifying perinatal depression and anxiety: Evidence-based practice in screening, Psychosocial assessment, and management. John Wiley & Sons, Ltd; 2015. doi: 10.1002/9781118509722
12. Gibson J, McKenzie-McHarg K, Shakespeare J, Price J, Gray R. A systematic review of studies validating the Edinburgh Postnatal Depression Scale in antepartum and postpartum women. Acta Psychiatr Scand. 2009;119(5):350-64. doi: 10.1111/j.1600-0447.2009.01363.x
13. Cox JL, Chapman G, Murray D, Jones P. Validation of the Edinburgh Postnatal Depression Scale (EPDS) in non-postnatal women. J Affect Disord. 1996;39(3):185-9. doi: 10.1016/0165-0327(96)00008-0
14. Spitzer RL, Kroenke K, Williams JB. Validation and utility of a self-report version of PRIME-MD: the PHQ primary care study. Primary care evaluation of mental disorders. Patient Health Questionnaire. JAMA. 1999;282(18):1737-44. doi: 10.1001/jama.282.18.1737
15. O'Connor E, Rossom RC, Henninger M, Groom HC, Burda BU. Primary care screening for and treatment of depression in pregnant and postpartum women: evidence report and systematic review for the US Preventive Services Task Force. Jama. 2016;315(4):388-406. doi: 10.1001/jama.2015.18948
16. Gjerdingen D, Crow S, McGovern P, Miner M, Center B. Postpartum depression screening at well-child visits: validity of a 2-question screen and the PHQ-9. Ann Family Med. 2009;7(1):63-70. doi: 10.1370/afm.933
17. Sidebottom AC, Harrison PA, Godecker A, Kim H. Validation of the Patient Health Questionnaire (PHQ)-9 for prenatal depression screening. Arch Womens Ment Health. 2012;15(5):367-74. doi: 10.1007/s00737-012-0295-x
18. Yawn BP, Dietrich AJ, Wollan P, Bertram S, Graham D, Huff J, et al. TRIPPD: A practice-based network effectiveness study of postpartum depression screening and management. Ann Family Med. 2012;10(4):320-9. doi: 10.1370/afm.1418
19. Löwe B, Kroenke K, Herzog W, Gräfe K. Measuring depression outcome with a brief self-report instrument: sensitivity to change of the Patient Health Questionnaire (PHQ-9). J Affect Disord. 2004;81(1):61-6. doi: 10.1016/s0165-0327(03)00198-8
20. Wisner K, Sit DY, McShea MC, Rizzo DM, Zoretich RA, Hughes CL, et al. Onset timing, thoughts of self-harm, and diagnoses in postpartum women with screen-positive depression findings. JAMA Psychiatry. 2013;70:490-8. doi: 10.1001/jamapsychiatry.2013.87
21. Kroenke K, Spitzer RL, Williams JB. The Patient Health Questionnaire-2: validity of a two-item depression screener. Med Care. 2003;41:1284-92. doi: 10.1097/01.mlr.0000093487.78664.3c
22. Whooley M, Avins A, Miranda J. Case-finding instruments for depression: two questions are as good as many. J Gen Intern Med. 1997;12:439-45. doi: 10.1046/j.1525-1497.1997.00076.x
23. Mann R, Adamson J, Gilbody SM. Diagnostic accuracy of case-finding questions to identify perinatal depression. Can Med Assoc J. 2012;184(8):E424-E30. doi: 10.1503/cmaj.111213
24. The National Institute for Health and Care Excellence (NICE). Antenatal and postnatal mental health: Clinical management and service guidance. The British Psychological Society & The Royal College of Psychiatrists; 2014. Available from: http://guidance.nice.org.uk/cg192. www.nice.org.uk.CG45.
25. Howard LM, Ryan EG, Trevillion K, Anderson F, Bick D, Bye A, et al. Accuracy of the Whooley questions and the Edinburgh Postnatal Depression Scale in identifying depression and other mental disorders in early pregnancy. Br J Psychiatry. 2018;212(1):50-6. doi: 10.1192/bjp.2017.9
26. Gregory KD, Chelmow D, Nelson HD, Van Niel MS, Conry JA, Garcia F, Kendig SM, O'Reilly N, Qaseem A, Ramos D, Salganicoff A. Screening for anxiety in adolescent and adult women: a recommendation from the Women's Preventive Services Initiative. Ann Intern Med. 2020. doi: 10.7326/m20-0580
27. Spitzer RL, Kroenke K, Williams JB, Lowe B. A brief measure for assessing generalized anxiety disorder: the GAD-7. Arch Intern Med. 2006;166. doi: 10.1001/archinte.166.10.1092
28. Simpson W, Glazer M, Michalski N, Steiner M, Frey BN. Comparative efficacy of the generalized anxiety disorder 7-item scale and the Edinburgh Postnatal Depression Scale as screening tools for generalized anxiety disorder in pregnancy and the postpartum period. Can. J Psychiatr. Rev. 2014;59. doi: 10.1177/070674371405900806
29. Skapinakis P. The 2-item Generalized Anxiety Disorder scale had high sensitivity and specificity for detecting GAD in primary care. Evid Based Med. 2007;12(5):149. doi: 10.1136/ebm.12.5.149
30. Matthey S. Using the Edinburgh Postnatal Depression Scale to screen for anxiety disorders. Depress Anxiety. 2008;25(11):926-31. doi: 10.1002/da.20415
31. Jones CJ, Creedy DK, Gamble JA. Australian midwives' awareness and management of antenatal and postpartum depression. Women Birth. 2012;25(1):23-8. doi: 10.1016/j.wombi.2011.03.001
32. Bertram S, Graham D, Kurland M, Pace W, Madison S, Yawn BP. Communication is the key to success in pragmatic clinical trials in practice-based research networks (PBRNs). J Am Board Fam Med. 2013;26(5):571-8. doi: 10.3122/jabfm.2013.05.120352
33. Schmied V, Johnson M, Naidoo N, Austin MP, Matthey S, Kemp L, et al. Maternal mental health in Aus-

tralia and New Zealand: A review of longitudinal studies. Women Birth. 2013;26(3):167-78. doi: 10.1016/j.wombi.2013.02.006
34. Rowan P, Greisinger A, Brehm B, Smith F, McReynolds E. Outcomes from implementing systematic antepartum depression screening in obstetrics. Arch Womens Ment Health. 2012;15(2):115-20. doi: 10.1007/s00737-012-0262-6
35. Segre LS, O'Hara MW, Brock RL, Taylor D. Depression screening of perinatal women by the Des Moines Healthy Start Project: program description and evaluation. Psychiatr Serv. 2012;63(3):250-5. doi: 10.1176/appi.ps.201100247
36. Miller LJ, McGlynn A, Suberlak K, Rubin LH, Miller M, Pirec V. Now what? Effects of on-site assessment on treatment entry after perinatal depression screening. J Women's Health. 2012;21(10):1046-52. doi: 10.1089/jwh.2012.3641
37. Highet N, Gamble J, Creedy D. Perinatal mental health and psychosocial risk screening in a community maternal and child health setting: Evaluation of a digital platform. Primary Health Care Res Devel. 2019;20. doi: 10.1017/s1463423618000336
38. Faisal-Cury A, Menezes PR. Antenatal depression strongly predicts postnatal depression in primary health care. Rev Brasileira Psiquiatria. 2012;34(4):446-50. doi: 10.1016/j.rbp.2012.01.003
39. Hannah P, Adams D, Lee A, Glover V, Sandler M. Links between early post-partum mood and post-natal depression. Br J Psychiatry. 1992;160(6):777-80. doi: 10.1192/bjp.160.6.777
40. Wickberg B, Hwang CP. Screening for postnatal depression in a population-based Swedish sample. Acta Psychiatr Scand. 1997;95:62-6. doi: 10.1111/j.1600-0447.1997.tb00375.x
41. Yawn BP, Bertram S, Kurland M, Wollan PC. Repeated depression screening during the first postpartum year. Ann Fam Med. 2015;13(3):228-34. doi: 10.1370/afm.1777
42. Yawn BP, Pace W, Wollan PC, Bertram S, Kurland M, Graham D, et al. Concordance of Edinburgh Postnatal Depression Scale (EPDS) and Patient Health Questionnaire (PHQ-9) to assess increased risk of depression among postpartum women. J Am Board Family Med JABFM. 2009;22(5):483-91. doi: 10.3122/jabfm.2009.05.080155
43. Peiris AN, Oh E, Diaz S. Psychiatric manifestations of thyroid disease. South Med J. 2007;100(8):773. doi: 10.1097/smj.0b013e3180f62916
44. Kang SY, Kim H-B, Sunwoo S. Association between anemia and maternal depression: a systematic review and meta-analysis. J Psychiatr Res. 2020;122:88-96. doi: 10.1016/j.jpsychires.2020.01.001
45. O'Hara MW, McCabe JE. Postpartum depression: Current status and future directions. Ann Rev Clin Psychol. 2013;9:379-407. doi: 10.1146/annurev-clinpsy-050212-185612
46. Yonkers KA, Vigod S, Ross LE. Diagnosis, pathophysiology, and management of mood disorders in pregnant and postpartum women. Focus. 2012;10(1):51-66. doi: 10.1176/appi.focus.10.1.51
47. Gjerdingen D, McGovern P, Center B. Problems with a diagnostic depression interview in a postpartum depression trial. J Am Board Fam Med. JABFM. 2011;24(2):187-93. doi: 10.3122/jabfm.2011.02.100197
48. Boyd RC. Primary care-based screening, diagnosis and management of postpartum depression effective for improving symptoms. BMJ Evidence-Based Medicine. 2013;18(3):e27-e. doi: 10.1136/eb-2012-100972
49. Milgrom J, Holt C, Gemmill A, Ericksen J, Leigh B, Buist A, et al. Treating postnatal depressive symptoms in primary care: A randomised controlled trial of GP management, with and without adjunctive counselling. BMC Psychiatry. 2011;11(1):95. doi: 10.1186/1471-244x-11-95
50. Dietrich AJ, Oxman TE, Williams JW, Schulberg HC, Bruce ML, Lee PW, et al. Re-engineering systems for the treatment of depression in primary care: cluster randomised controlled trial. BMJ. 2004;329(7466):602. doi: 10.1136/bmj.38219.481250.55
51. Katon WJ, Lin EH, Von Korff M, Ciechanowski P, Ludman EJ, Young B, et al. Collaborative care for patients with depression and chronic illnesses. N Engl J Med. 2010;363(27):2611-20. doi: 10.1056/nejmoa1003955
52. Munk-Olsen T, Laursen TM, Pedersen CB, Mors O, Mortensen PB. New parents and mental disorders: a population-based register study. JAMA. 2006;296(21):2582-9. doi: 10.1001/jama.296.21.2582
53. Viguera A, Whitfield T, Baldessarini R, Newport D, Stowe Z, Reminick A. Risk of recurrence in women with bipolar disorder during pregnancy: prospective study of mood stabilizer discontinuation. Am J Psychiatry. 2007;164:1817-24. doi: 10.1176/appi.ajp.2007.06101639
54. Munk-Olsen T, Laursen TM, Mendelson T, Pedersen CB, Mors O, Mortensen PB. Risks and predictors of readmission for a mental disorder during the postpartum period. Arch Gen Psychiatry. 2009;66(2):189-95. doi: 10.1001/archgenpsychiatry.2008.528
55. Nanni V, Uher R, Danese A. Childhood maltreatment predicts unfavorable course of illness and treatment outcome in depression: a meta-analysis. Am J Psychiatry. 2012;169(2):141-51. doi: 10.1176/appi.ajp.2011.11020335
56. Oates M. Suicide: the leading cause of maternal death. Br J Psychiatry. 2003;183:279-81. doi: 10.1192/bjp.183.4.279
57. Austin MP, Kildea S, Sullivan E. Maternal mortality and psychiatric morbidity in the perinatal period: challenges and opportunities for prevention in the Australian setting. Med J Aust. 2007;186(7):364-7. doi: 10.5694/j.1326-5377.2007.tb00940.x
58. Appleby L, Mortensen PB, Faragher EB. Suicide and other causes of mortality after post-partum psychiatric admission. Br J Psychiatry. 1998;173:209-11. doi: 10.1192/bjp.173.3.209
59. Silva EP, Lemos A, Andrade CH, Ludermir AB. Intimate partner violence during pregnancy and behavioral problems in children and adolescents: a meta-analysis. Jornal de pediatria. 2018;94(5):471-82. doi: 10.1016/j.jped.2018.01.007
60. Leigh B, Milgrom J. Risk factors for antenatal depression, postnatal depression and parenting stress. BMC Psychiatry. 2008;8:24. doi: 10.1186/1471-244x-8-24
61. Milgrom J, Gemmill AW, Bilszta JL, Hayes B, Barnett B, Brooks J, et al. Antenatal risk factors for postnatal depression: a large prospective study. J Affect Disord. 2008;108:147-57. doi: 10.1016/j.jad.2007.10.014
62. Buist A, Janson H. Childhood sexual abuse, parenting and postpartum depression – a 3-year follow-up study. Child Abuse Negl. 2001;25(7):909-21. doi: 10.1016/s0145-2134(01)00246-0
63. Howard L, Oram S, Galley H, Trevillion K, Feder G. Domestic violence and perinatal mental disorders: A systematic review and meta-analysis. PLoS Med. 2013;10(5):1-16. doi: 10.1371/journal.pmed.1001452
64. Boyce P, Hickey A. Psychosocial risk factors to major depression after childbirth. Soc Psychiatry Psychiatr Epidemiol. 2005;40(8):605-12. doi: 10.1007/s00127-005-

0931-0
65. Munk-Olsen T, Laursen TM, Pedersen CB, Mors O, Mortensen PB. Family and partner psychopathology and the risk of postpartum mental disorders. J Clin Psychiatry. 2007;68(12):1947-53. doi: 10.4088/jcp.v68n1217
66. Austin MP, Fisher J, Reilly N. Psychosocial assessment and integrated perinatal care. In: Milgrom J, Gemmill A (Eds). Identifying perinatal depression and anxiety: Evidence-based practice in screening, Psychosocial Assessment and Management: John Wiley & Sons, Ltd; 2015:121-38. doi: 10.1002/9781118509722.ch8
67. Reilly N, Harris S, Loxton D, Chojenta C, Forder P, Austin M-P. The impact of routine assessment of past or current mental health on help-seeking in the perinatal period. Women Birth. 2014;27(4):e20-e7. doi: 10.1016/j.wombi.2014.07.003
68. Reilly N, Harris S, Loxton D, Chojenta C, Forder P, Milgrom J, et al. Referral for management of emotional health issues during the perinatal period: does mental health assessment make a difference? Birth. 2013;40(4):297-306. doi: 10.1111/birt.12067
69. Barnett B. An integrated model of perinatal care. Eur Psychiatr Rev. 2011;4(2):71-4. doi: 10.1016/s0924-9338(10)70057-2
70. Sims DJ, Fowler C. Postnatal psychosocial assessment and clinical decision-making, a descriptive study. J Clin Nurs. 2018;27(19-20):3739-49. doi: 10.1111/jocn.14530
71. Miller P, Phipps M, Chatterjee S, Rajeevan N, Levin F, Frawley S, et al. Exploring a clinically friendly web-based approach to clinical decision support linked to the electronic health record: design philosophy, prototype implementation, and framework for assessment. JMIR Medical Informatics. 2014;2(2):e20. doi: 10.2196/medinform.3586
72. Kingston D, Janes-Kelley S, Tyrrell J, Clark L, Hamza D, Holmes P, et al. An integrated web-based mental health intervention of assessment-referral-care to reduce stress, anxiety, and depression in hospitalized pregnant women with medically high-risk pregnancies: a feasibility study protocol of hospital-based implementation. JMIR Res Protoc. 2015;4(1):e9. doi: 10.2196/resprot.4037
73. Cuijpers P, Brannmark JG, van Straten A. Psychological treatment of postpartum depression: a meta-analysis. J Clin Psychol. 2008;64(1):103-18. doi: 10.1002/jclp.20432
74. Dennis CL, Hodnett ED. Psychosocial and psychological interventions for treating postpartum depression. Cochrane database of systematic reviews. 2007(4). doi: 10.1002/14651858.cd006116.pub2
75. Dennis CL, Ross LE, Grigoriadis S. Psychosocial and psychological interventions for treating antenatal depression. Cochrane Database of Systematic Reviews. 2007(3). doi: 10.1002/14651858.cd006309
76. Molyneaux E, Howard LM, McGeown HR, Karia AM, Trevillion K. Antidepressant treatment for postnatal depression. Cochrane Database of Systematic Reviews. 2014(9). doi: 10.1002/14651858.cd002018.pub2
77. Maguire PN, Clark GI, Wootton BM. The efficacy of cognitive behavior therapy for the treatment of perinatal anxiety symptoms: A preliminary meta-analysis. J Anx Disord. 2018;60:26-34. doi: 10.1016/j.janxdis.2018.10.002
78. Bayrampour H, Trieu J, Tharmaratnam T. Effectiveness of eHealth interventions to reduce perinatal anxiety: A systematic review and meta-analysis. J Clin Psychiatry. 2019;80(1). doi: 10.4088/jcp.18r12386
79. Shi Z, MacBeth A. The effectiveness of mindfulness-based interventions on maternal perinatal mental health outcomes: a systematic review. Mindfulness. 2017;8(4):823-47. doi: 10.1007/s12671-016-0673-y
80. Pearlstein TB, Zlotnick C, Battle CL, Stuart S, O'Hara MW, Price AB, Grause MA, Howard M. Patient choice of treatment for postpartum depression: a pilot study. Archives of women's mental health. 2006;9(6):303-8. doi: 10.1007/s00737-006-0145-9
81. Yonkers KA, Lin H, Howell HB, Heath AC, Cohen LS, Yonkers KA, et al. Pharmacologic treatment of postpartum women with new-onset major depressive disorder: a randomized controlled trial with paroxetine. J Clin Psychiatry. 2008;69(4):659-65. doi: 10.4088/jcp.v69n0420
82. O'Hara MW, Dennis C-L, McCabe JE, Galbally M. Evidence-based treatments and pathways to care. In: Milgrom J, Gemmill A (Eds). Identifying perinatal depression and anxiety: Evidence-based practice in screening, Psychosocial Assessment, and Management: John Wiley & Sons, Ltd; 2015:177-92. doi: 10.1002/9781118509722.ch11
83. Sharp DJ, Chew-Graham C, Tylee A, Lewis G, Howard L, Anderson I, et al. A pragmatic randomised controlled trial to compare antidepressants with a community-based psychosocial intervention for the treatment of women with postnatal depression: the RESPOND trial. Health Technol Assess. (Winchester, England). 2010;14(43):iii-iv, ix-xi, 1-153. doi: 10.3310/hta14430
84. Galbally M, Lewis AJ, Buist A. Developmental outcomes of children exposed to antidepressants in pregnancy. Aust N Z J Psychiatry. 2011;45(5):393-9. doi: 10.3109/00048674.2010.549995
85. Milgrom J, Martin PR, Negri LM. Treating postnatal depression. A psychological approach for health care practitioners. Chichester: Wiley; 1999.
86. Lewinsohn PM, Antonuccio DO, Steinmetz JL, Teri L. The coping with depression course: A psychoeducational intervention for unipolar depression. Eugene: Castalsa Publishing Company; 1984. doi: 10.1080/00207411.1984.11448974
87. Milgrom J, Negri LM, Gemmill AW, McNeil M, Martin PR. A randomized controlled trial of psychological interventions for postnatal depression. Br J Clin Psychol. 2005;44(4):529-42. doi: 10.1348/014466505x34200
88. Milgrom J, Gemmill A, Ericksen J, Burrows G, Buist A, Reece J. Treatment of postnatal Depression with Cognitive Behavioural Therapy, Sertraline and Combination Therapy: A Randomised Controlled Trial. Aust N Z J Psychiatry. 2015;49(3):236-45. doi: 10.1177/0004867414565474
89. Milgrom J, Holt C, Holt CJ, Ross J, Ericksen J, Gemmill AW. Feasibility study and pilot randomised trial of an antenatal depression treatment with infant follow-up. Arch Womens Ment Health. 2015;18(5):717-30. doi: 10.1007/s00737-015-0512-5
90. Milgrom J, Schembri C, Ericksen J, Ross J, Gemmill AW. Towards parenthood: an antenatal intervention to reduce depression, anxiety and parenting difficulties. J Affect Disord. 2011;130(3):385-94. doi: 10.1016/j.jad.2010.10.045
91. Lau Y, Htun TP, Wong SN, Tam WSW, Klainin-Yobas P. Therapist-supported internet-based cognitive behavior therapy for stress, anxiety, and depressive symptoms among postpartum women: A systematic review and meta-analysis. J Med Internet Res. 2017;19(4). doi: 10.2196/jmir.6712
92. Danaher B, Milgrom J, Seeley J, Stuart S, Schembri C, Tyler M, et al. MumMoodBooster web-based intervention for postpartum depression: Feasibility trial results. J Med Internet Res. 2013;15(11):e242. doi: 10.2196/jmir.2876
93. Milgrom J, Danaher B, Holt C, Holt CJ, Seeley J, Tyler MS, et al. Internet cognitive behavioural therapy for

Women with Postnatal Depression: a randomised controlled trial of MumMoodBooster. J Med Internet Res. 2016;18(3):e54. doi: 10.2196/jmir.4993
94. Titov N. Internet-delivered psychotherapy for depression in adults. Curr Opin Psychiatry. 2011;24(1):18-23. doi: 10.1097/yco.0b013e32833ed18f
95. Mulcahy R, Reay RE, Wilkinson RB, Owen C. A randomised control trial for the effectiveness of group interpersonal psychotherapy for postnatal depression. Arch Womens Mental Health. 2010;13(2):125-39. doi: 10.1007/s00737-009-0101-6
96. Reay RE, Owen C, Shadbolt B, Raphael B, Mulcahy R, Wilkinson RB. Trajectories of long-term outcomes for postnatally depressed mothers treated with group interpersonal psychotherapy. Arch Womens Ment Health. 2012;15(3):217-28. doi: 10.1007/s00737-012-0280-4
97. Misri S, Reebye P, Corral M, Milis L, Misri S, Reebye P, et al. The use of paroxetine and cognitive-behavioral therapy in postpartum depression and anxiety: a randomized controlled trial. J Clin Psychiatry. 2004;65(9):1236-41. doi: 10.4088/jcp.v65n0913
98. Bloch M, Meiboom H, Lorberblatt M, Bluvstein I, Aharonov I, Schreiber S. The effect of sertraline add-on to brief dynamic psychotherapy for the treatment of postpartum depression: a randomized, double-blind, placebo-controlled study. J Clin Psychiatry. 2012;73(2):235-41. doi: 10.4088/jcp.11m07117
99. Murray L, Halligan S, Cooper P. Postnatal depression and young children's development. Handbook Inf Mental Health. 2018:172-86. doi: 10.1002/9781444327588.ch8
100. Stein A, Pearson RM, Goodman SH. Effects of perinatal mental disorders on the fetus and child. Lancet. 2014;384(9956):1800-19. doi: 10.1016/s0140-6736(14)61277-0
101. Tronick EZ, Weinberg MK. Depressed mothers and infants: failure to form dyadic states of consciousness. In: Murray L, Cooper P (Eds). Postpartum depression and child development. New York: Guilford Press; 1997:54. doi: 10.1080/13698039808404703
102. Lindensmith R. Interventions to improve maternal-infant relationships in mothers with postpartum mood disorders. MCN: Am J Matern/Child Nurs. 2018;43(6):334-40. doi: 10.1097/nmc.0000000000000471
103. Milgrom J, Ericksen J, McCarthy RM, Gemmill AW. Stressful impact of depression on early mother-infant relations. Stress Health. 2006;22(4):229-38. doi: 10.1002/smi.1101
104. Milgrom J, Holt C. Early intervention to protect the mother-infant relationship following postnatal depression: study protocol for a randomised controlled trial. Trials. 2014;15:385. doi: 10.1186/1745-6215-15-385
105. Gidget Foundation and Perinatal Depression & Anxiety Australia (PANDA). The cost of perinatal depression and anxiety in Australia. 2019.