

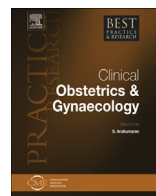


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Screening for perinatal depression



Jeannette Milgrom, PhD, Professor^{a,b,*},
Alan W. Gemmill, PhD^a

^a Parent–Infant Research Institute, Department of Clinical and Health Psychology, Austin Health, Melbourne, Victoria 3081, Australia

^b Melbourne School of Psychological Sciences, University of Melbourne, Victoria, Australia

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Perinatal depression is prevalent, under-diagnosed and can have serious long-term effects on the wellbeing of women, their partners and infants. In the absence of active identification strategies, most women with perinatal depression will neither seek nor receive help. To enable early detection and timely intervention, universal screening is coming to be seen as best practice in many settings. Although the strength of recommendations and the preferred methods of identification vary in different countries (e.g. the Edinburgh Postnatal Depression Scale, brief case-finding questions), appropriate training for health professionals in wider psychosocial assessment is essential to maximise usefulness while minimising potential harms. Clear pathways of systematic follow up of all positive screening results with a diagnostic procedure and access to effective treatment are centrally important both for the clinical effectiveness of screening and for health system costs. It is also necessary to further build on the emerging evidence base for the clinical effectiveness of screening.

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Perinatal depression

Perinatal depression can be defined pragmatically [1] as an episode of major or minor depression with an onset either during pregnancy or during the first 12 months postpartum (commonly called antenatal depression and postnatal depression respectively). By contrast, the DSM-IV listed a ‘specifier’

* Corresponding author. Melbourne School of Psychological Sciences, University of Melbourne, Victoria, Australia. Tel.: +61 03 9496 4496; Fax: +61 03 9496 4148.

E-mail address: jeannette.milgrom@austin.org.au (J. Milgrom).

for postnatal (postpartum) depression as having an onset within 4 weeks of childbirth [2]. Although the DSM-5 now includes an updated specifier for depression with 'peripartum onset', which includes pregnancy [3], these definitions remain problematic given that during the very early postpartum period, around 85% of women experience the transitory 'postnatal blues' (or 'baby blues') [4]. As a result, the DSM specifiers are somewhat at odds with the pragmatic definitions most commonly applied in practice by working clinicians and researchers.

Rationale for perinatal depression screening

If a health condition is serious, prevalent, under-detected and treatable, and if a tolerable screening procedure of known accuracy is available, then screening can be an effective measure in principle [5]. Ultimately, a worthwhile screening process must result in a clinical benefit for those screened (a reduction in morbidity associated with the condition).

In the case of depression during pregnancy or the postpartum (perinatal depression) many of these prerequisites for undertaking screening are met.

Perinatal depression is serious and has lasting consequences. The effect on the woman herself is profound. Depression in pregnancy is linked to poor maternal self-care, inadequate nutrition [6], premature labour and adverse obstetric outcomes [7–9]. In the postpartum, at a time when many women expect a positive parenting experience, the symptoms of depression such as low mood, loss of interest, fatigue and feelings of worthlessness can be devastating. Suicidal thoughts may occur along with feelings of failure as a mother. Partners of depressed women are also vulnerable to mental health difficulties in the perinatal period [10,11]. A unique feature of perinatal depression is the additional effect of maternal illness on infant wellbeing. Several longitudinal studies have confirmed that maternal depression in the postpartum period has detrimental effects on development beginning in infancy and lasting at least into adolescence [12–17]. Evidence also shows that maternal emotional distress in pregnancy affects the fetus *in utero*, linked to lasting problems in child cognitive and behavioural domains [18].

Perinatal depression is highly prevalent, with point prevalence estimates commonly exceeding 10% in most high-income countries [19–23]. The best available meta-estimates suggest a point prevalence of 13% at 3 months postpartum [24]. In the antenatal period, at each of the three trimesters of pregnancy, about 9% of women suffer major or minor depression [24].

Adequate screening tools exist, and their properties and limitations are well established. Among the many tools and strategies for identification, a rapid, inexpensive screening tool for perinatal women, the Edinburgh Postnatal Depression Scale (EPDS), is the most widely applied [25]. Its accuracy and psychometric properties are the most established of any depression screening tool in a range of perinatal populations.

Depression can be successfully treated [26,27]. For depression in general, good-quality evidence shows that both antidepressants and psychological treatments are effective [28]. There is also limited support for combination therapy [29,30]. Depression in the postpartum can be treated successfully with psychological therapies (cognitive behavioural therapy or interpersonal psychotherapy) [26,31,32], which most, but not all women, prefer to medication during pregnancy and lactation for reasons such as potential side-effects on infants [33–35].

Non-detection by health professionals in the absence of an active identification strategy appears common [36,37]. Furthermore, although perinatal depression can be treated successfully, it is unlikely that most depressed perinatal women will actively seek treatment [38]. Seeking or accepting help for emotional distress in the perinatal period may prove difficult for women for a number of reasons [33]. These can include perceptions of stigma and self-stigma; lack of knowledge about depression; unrealistic beliefs about coping with motherhood; feelings of failure; and fears around contact with mental health services. Such barriers are easily compounded by the symptoms of depression themselves, such as low energy, and this can result in women feeling de-motivated about accessing help [39]. As a result, most affected women do not actively seek assistance [38]. Non-identification may result in prolongation or worsening of depression and make women vulnerable to parenting difficulties [15].

Screening seems to be acceptable to most perinatal women, both depressed and non-depressed (although most research is confined to the acceptability of the EPDS [40]), and most perinatal

women view screening as desirable [41]. Furthermore, despite low rates of help-seeking, evidence shows that a large majority of women believe screening for perinatal depression is 'a good thing' [41,42].

Given that many pre-requisites for screening in pregnancy and the postpartum are met, considerable interest has been shown internationally in the potential of using screening tools to increase identification of perinatal depression, with the ultimate aim of increasing treatment rates and thereby reducing morbidity. In considering the case for the introduction of routine universal perinatal depression screening, the UK National Screening Committee has outlined a more detailed list of pre-requisites including the main ones outlined above [43].

An important caveat is that screening in itself does not definitively identify depression in an individual (i.e. the function of diagnostic procedures). Screening aims, as accurately as possible, to identify a high prevalence sub-population who can then be offered a full diagnostic assessment based on gold-standard clinical criteria. Thus, the clinical utility of a screening process is greatly influenced by its ability to accurately identify a high prevalence group to which diagnostic-stage procedures can then be targeted. After a diagnostic assessment, for women identified as depressed, an integrated management plan for ensuring smooth access to the best pathway to care is imperative. This raises the question of availability of pathways to care, particularly in developing countries [44]. Models that use existing primary care resources have highlighted the need to appropriately train frontline health professionals [45,46]. These considerations are discussed more fully below, together with the emerging evidence for the clinical effectiveness of screening programmes.

Screening tools

The Health Technology Assessment by Hewitt et al. [47] produced a broad five-fold classification of strategies aimed at increasing detection of perinatal depression: (1) postnatal screening with specialised depression screening questionnaires; (2) postnatal screening with generic depression questionnaires; (3) antenatal screening with standardised questionnaires to identify current depression or risk of future depression; (4) antenatal assessment of known risk factors to identify those women likely to develop depression; and (5) targeted training of health professionals to enhance recognition of clinical symptoms and ensure thorough psychosocial assessment. Thus, in the existing evidence base, a distinction is made between approaches designed to detect existing depression and those that attempt to predict future onset of a depressive episode in non-depressed women. This second, predictive, approach to identification has quite a long research history but attempts to develop tools and processes to do this have been largely unsuccessful [48].

For most clinical purposes, screening for perinatal depression is focused on assessing current emotional state. Numerous tools are available for generic depression screening that have been used in perinatal populations. These include the Beck Depression Inventory [49], the General Health Questionnaire, [50] the Hospital Anxiety and Depression Scale [51], and Zung's Self-rating Depression Scale [52]. In perinatal populations, however, the most widely used and validated tools are the EPDS [25] and the Postpartum Depression Screening Scale (PDSS) [53]. Both are brief, self-report questionnaires specifically developed for use with perinatal women, which take between 5 and 10 mins to complete. In addition, the use of two brief case-finding questions [54] has been recommended in some countries [55].

The EPDS is a self-rated, 10-item instrument that requires women to read 10 statements relating to symptoms of depression (depressed mood, anhedonia) in the previous seven days and to choose one of four possible responses for each statement. The EPDS deliberately excludes some somatic symptoms (i.e. changes in appetite and sleeping patterns) that are common to women in the perinatal period in the absence of a mental disorder. Responses are rated between 0 and 3, and summed to yield a maximum score of 30. Item number 10 addresses thoughts of self harm and suicidal ideation. The most commonly applied cut-off score indicating possible depression (i.e. a positive screening result) is 13 points or over. In a synthesis of more than 40 studies using the EPDS, Hewitt et al. [47] located an optimal cut-off point of 12 for major depression and 10 for major and minor depression combined. A recent comparative effectiveness review found moderate strength of evidence that both the sensitivity and specificity of the EPDS range from 80–90% at the most commonly applied cut-offs [56], but

considerable variation exists among studies in setting, population and screening threshold. Given the observed variability in the test's performance, it should be remembered that the EPDS will produce both false positive and false negative screening results. Therefore, as with any screening tool, the EPDS should complement rather than replace clinical judgment. Most screening tools, however, suffer from the same problem [57] and, compared with other instruments used for perinatal depression screening, the test performance of the EPDS seems to be favourable [56]. In short, the EPDS has been judged by a detailed Health Technology Assessment and by the UK National Screening Committee to be a 'simple, safe, precise and validated screening test' for which suitable cut-offs can be defined [43,47]. A central value of the positive predictive value of the English-language version of the EPDS in the general postnatal population (the probability that a positive screening result is correct) has been estimated at between 50 and 60% [57,58]. In addition to identifying possible depression, three items in the EPDS have been found to load on an anxiety factor in both antenatal and postnatal populations, and may become useful in identifying perinatal anxiety disorders [59–62]. Further research, however, is required to fully establish the psychometric properties of the so-called anxiety sub-scale and its performance and acceptability relative to anxiety-specific screening tools [62]. The EPDS has been validated for antenatal use [57] and in many non-English translations. It is in widely used internationally for antenatal and postnatal screening [63] and is deliberately brief.

Although less widely validated than the EPDS, on average the PDSS seems to perform similarly in terms of sensitivity and specificity as a screening instrument for depression [56]. The PDSS comprises seven dimensions: (1) sleeping and eating disturbances; (2) anxiety and insecurity; (3) emotional lability; (4) cognitive impairment; (5) loss of self; (6) guilt and shame; and (7) thoughts of self-harm. Each dimension contains five items that capture the range of feelings a new mother may experience. Respondents rate their agreement with each item on a five-point scale indicating how they have been feeling in the previous 2 weeks. Scores range from 35 to 135. A cut-off of 60 or over is used to identify significant symptoms of depression and 80 or over is considered a positive screen for major depression [64].

A different approach to identification is the use of verbal questions in an interview format. In 2007, the National Institute for Health and Clinical Excellence in the UK released guidance on perinatal mental health care [55], which recommended the use of the following two case-finding questions [54] for depression in perinatal women: (1) 'during the past month, have you often been bothered by feeling down, depressed or hopeless?'; and (2) 'during the past month, have you often been bothered by little interest or pleasure in doing things?' The NICE guidance recommends that if the answer to either of these two questions is 'yes' that a third question should be asked: (3) 'is this something you feel you need or want help with?'

The evidence for the NICE recommendation remains somewhat limited, not least because the two case-finding questions approach was not specifically intended for use with new or expectant mothers and had never been validated in a perinatal setting at that time (although the US Preventative Services Task Force had also endorsed the two case-finding questions approach in its recommendation for depression screening in adults in the USA [65]. More recently, however, two studies [66,67] have validated the two case-finding questions approach in both postnatal and prenatal settings, and have confirmed that the approach has excellent properties for 'ruling out' depression in perinatal women (a negative predictive value of 100%). This could be valuable for busy health practitioners, and has led to the suggestion [66–68] that the this approach could be usefully deployed as a triage test, potentially reducing (by up to 60%) the number of women requiring fuller assessment with a screening tool like the EPDS [67]. This two-step screening procedure (which would still require a diagnostic confirmation stage) has, as far as we know, yet to be evaluated in practice.

Interpretation of screening results

Whichever steps and tools are used in the screening process, it is vital to be aware that a positive screening result is not a diagnosis of depression. The EPDS was developed specifically to screen for symptoms of possible postnatal depression, but it cannot provide a diagnosis. In maximising the benefits and minimising potential harms of screening for perinatal depression, much depends on how the meaning of results are interpreted and communicated to women. For example, even after using a triage test with excellent negative predictive value, a subsequent negative result on a screening tool merely

indicates a lower than average chance of a depression diagnosis on a confirmatory diagnostic stage – it does not rule out depression. Similarly, it would be inaccurate if a woman was told that she was suffering from a depressive disorder on the basis of a positive screening result, which only indicates an elevated likelihood of being currently depressed. Phrases such as ‘at risk’ can be misleading [58,69], and may suggest the likelihood of developing depression in the future. Screening instruments do not establish this. Such potential harms through misdiagnosis, misinterpretation, labelling, and stigma, for example, are some reasons why it is always good practice to systematically follow every positive screen with an offer of a diagnostic stage procedure, but they are not the only ones. The cost-effectiveness of routine screening seems to be maximised when all positive screening results are followed by a confirmatory diagnostic stage, as it cuts the cost of initiating treatment in ‘false positive’ cases [70].

Further, two qualities of the EPDS may be particularly useful in clinical practice. First, there is some evidence that even when continued assessment does not reveal a depressive condition, following up a positive EPDS result can be important. Other common mental disorders may be prevalent among women who score above threshold but do not have a diagnosis of depression. In a screening study of 4168 women [71], 85% of women with positive scores on the EPDS either had depression or another DSM-IV diagnosis of a common mental disorder of some kind (e.g. bipolar, psychotic, dysthymic and anxiety disorders etc). A similar result was observed in a recent US study based on the screening of a large cohort of 10,000 women with the EPDS [72]; almost all women with a positive screening score had a diagnosable mental health disorder. Secondly, the EPDS contains an item (item 10) regarding thoughts of self-harm and suicidal ideation. This allows any score greater than zero on this item to be acted upon rapidly and decisively.

Psychosocial assessment

Psychosocial assessment aims to place depression screening in the context of each woman’s life circumstances, providing a holistic integrated, woman-centred approach to emotional health. The administration of a standardised screening tool such as the EPDS when coupled with discussing women’s current life situation is also likely to make screening more acceptable and lead women to offer more honest responses [40]. This provides the necessary information for developing an appropriate management plan and considering psychosocial supports with a view to helping women cope more effectively with the demands of parenthood.

In conducting a fuller psychosocial assessment, a common approach has been to identify the presence of major risk factors associated with depression in perinatal women. For example, in the postnatal period, several risk factors for depression are consistently found to have the largest effects in meta-analyses [19,21,73–75]. These include (1) a history of depression or anxiety; (2) antenatal depression or anxiety; (3) a family history of mental health difficulties; (4) lack of support from the woman’s partner; (5) lack of practical, financial, social or emotional supports; and (6) life stresses and adverse life events.

By conducting a fuller psychosocial assessment, the clinician can identify those women with an increased or reduced vulnerability to mental health difficulties. This may provide a useful preventive focus so that those women not symptomatic on a tool such as the EPDS can benefit from heightened watchfulness by health professionals in cases with a higher risk profile (e.g. where a woman discloses a previous history of mental health difficulties). In addition, given the common co-morbidity of anxiety [72] with perinatal depression, a comprehensive psychosocial evaluation provides an opportunity to progress to a diagnostic assessment for possible anxiety disorders if indicated. Similarly, if there are indications of suicidal thoughts (e.g. any score above zero on item 10 of the EPDS) (‘the thought of harming myself has occurred to me’), the next step should be a full risk assessment aimed at gaining a better understanding of the likelihood of a woman harming herself/her infant and the level and immediacy of suicidal thinking. Key points to assess are the frequency and strength of suicidal thoughts; the extent to which a plan has been formed; the lethality of the intended method; and access to means of carrying the plan through. This will allow better judgment of the need for a crisis referral in such cases.

When integrated into routine maternity care alongside screening, psychosocial assessment can also capture the broader context of a woman’s life, including her supports, stressors, the quality of her

relationships, and her particular cultural context. This information can be valuable for informing the tailored management of women. In addition, given the number of studies suggesting perinatal mood disorders are associated with inter-personal violence, a number of additional areas of inquiry are relevant. For example, a recent meta-analysis suggested a three-fold increase in the odds of heightened depressive symptoms in postnatal women who had experienced partner violence in their pregnancy. In cross-sectional studies, an increased likelihood of having experienced domestic violence was consistently reported amongst depressed perinatal women [76].

In Australia, the current clinical practice guidelines suggest asking questions around a number of important factors, including substance use, past or current physical or sexual abuse, recent life stressors and current practical and emotional support [45]. Psychosocial assessment is also cautiously endorsed in some other countries [1,55,77] and a number of self-report questionnaires designed to be used in psychosocial assessment are available [78,79]. The efficacy of such assessment tools in improving women's clinical outcomes, however, is currently unsupported by the evidence [45]. Appropriate training for health professionals in the skillful conduct of psychosocial assessment is, therefore, necessary, and leads to a more consistent standard of care and a more acceptable experience for women [80–82].

Above all, it is important that the setting ensures the woman's privacy and that she feels confident in this. Continued research is clearly necessary to determine the best models of conducting psychosocial assessment but training of health professionals is likely to be key [80–82].

Acceptability of perinatal screening for depression

To have any effect on morbidity, a screening process must first of all have good acceptability (tolerability) not only in the general population screened but specifically in the target group, as well as among health professionals conducting the procedure. In the case of screening for perinatal depression, reasonable evidence now shows that most women and health professionals find the process acceptable. It is also clear, however, that some women are not comfortable with such screening, and that important sources of variation in acceptability may occur. Studies using quantitative methods to rate acceptability and based on surveying large samples of perinatal women, have generally found acceptability to be high (80–90%) but not universal. This overall acceptability has been confirmed in both depressed and non-depressed women in at least one large survey [41]. Smaller, qualitative studies based around extended interviews with small numbers of women [83] have revealed that some find the process intrusive, potentially stigmatizing, and that they have not answered the screening questions honestly. Furthermore, most of the available information on the acceptability of screening pertains to the use of a single instrument (the EPDS). In the most complete review and synthesis of the quantitative and qualitative literature [40], 16 studies were identified, 15 of which focused on the EPDS. Although screening was generally found to be acceptable overall, questions remained over the appropriateness of the EPDS for some ethnic groups and the context in which screening was conducted (a familiar setting, such as home, with a familiar health professional was preferred). Women also found screening more acceptable if they had clear prior notification about the process, if they felt their health professional was engaged and empathetic and preferred verbal feedback and discussion rather than a simple report of their 'paper and pencil' test score.

In short, it is generally agreed that screening for perinatal depression has good acceptability (as recognised in the latest advice on perinatal depression screening by the UK National Screening Committee [43]), but its method of administration is extremely important. Women must be comfortable about the process and have a trusting relationship with their healthcare professional. On the other hand, healthcare professionals need to remain sensitive to potential cultural differences in attitudes to depression screening and can help women by giving an explanation of the screening process in advance.

Clinical effectiveness of screening for perinatal depression

The fundamental aim of screening is to reduce the morbidity associated with perinatal depression. Yet, despite the consensus that perinatal depression constitutes a significant public health problem,

good-quality evidence about the clinical effectiveness of screening programmes has been surprisingly slow to emerge, relevant studies being rare and of small size [84]. Indeed, as recently as 2010, virtually no trials testing the effectiveness of screening in reducing morbidity were of good enough quality to meaningfully inform clinical practice [43]. The most comprehensive Health Technology Assessment on the subject highlighted some suggestive evidence that screening with the EPDS, coupled with some enhancements to usual care, may lead to reductions in depressive symptoms [47]. The latest synthesis of the available evidence is now available in a comparative effectiveness review by the US Agency for Healthcare Research and Quality [56].

Three randomised cluster trials of reasonable quality were specifically designed to test the effect of screening interventions on clinical outcomes [46,85,86]. The Agency for Healthcare Research and Quality review has graded these, as providing low-to-moderate strength of evidence for the clinical efficacy of perinatal depression screening in reducing morbidity [56]. All of these trials involved specific training of primary care health professionals in screening, recognition or treatment of depression [46,85,86]. Taken together, what these studies point to is that screening seems to have the biggest effect when it is implemented as a well-resourced, integrated programme with clearly defined pathways to management that include a systematic policy of acting on all positive screening results by offering a confirmatory follow-up procedure and treatment if indicated. The interpolation of a confirmatory or diagnostic stage between screening and treatment commencement is clinically good practice, but also complements the findings of decision models by Paulden et al. [70], that a diagnostic follow up or clinical confirmation of all positive screening results improves the cost-effectiveness of perinatal depression screening at a population level.

Morrell et al. [46] conducted a cluster trial of the benefits of training health visitors in the identification of depression and in treatment based on cognitive-behavioural therapy. The trial found reduced morbidity at 6–12 months (measured by scores on the EPDS). Leung et al. [85] introduced the systematic use of the EPDS and integrated screening results into clinical pathways across a number of practices. In these intervention sites, nurses were given women's EPDS scores and systematically referred those with high scores to a confirmatory stage procedure and treatment if indicated. This did not preclude low scorers being referred on clinical judgment. At 6 months, women cared for at the intervention sites had better mental health outcomes than those attending usual care clinics. Similarly, the cluster trial reported by Yawn et al. [86] evaluated a practice-level intervention based around an integrated screening, diagnosis and treatment programme compared with usual care practices. The screening programme led to lower levels of depressive symptoms in the first year postpartum. The rates of further investigation and treatment after positive screening results were significantly improved in these latter two trials [85,86], where screening, diagnosis, and treatment were made available through the same health service without a need for outside referral, pointing to the importance of continuity of care [56].

Although some evidence is emerging for the clinical effectiveness of screening *per se*, it should be noted that the best times to screen, or the optimal interval between repeat screens with an instrument like the EPDS, are not yet established owing to insufficient quality and quantity of the available evidence [56].

Existing clinical guidance

Internationally, different health agencies apply different sets of criteria for assessing the usefulness of routine perinatal depression screening programmes, and this has led to different guidance [1,55,77] but all centre on a consideration of the balance of potential harms and potential benefits. In Australia, the leading clinical guidance recommends screening and assessment for every perinatal woman at least once during pregnancy and once in the postpartum [45]. In the USA, the recent Agency for Healthcare Research and Quality review [56] concludes that the current evidence base is consistent with the recommendation of the US Preventative Services Task Force for depression screening in general [65]; that is, screening is recommended only when 'adequate resources are available to ensure appropriate diagnostic and therapeutic services'. The American College of Obstetricians and Gynecologists endorses the routine screening of postpartum women with the EPDS or similar tools [87] in the following terms 'screening for depression has the potential to benefit a woman and her family and

should be strongly considered. Women with a positive assessment require follow-up evaluation and treatment if indicated. Medical practices should have a referral process for identified cases'. Health bodies in other countries have issued similar advice after due weighing of the evidence [1,55,77] but routine screening is still short of meeting policy guidelines in some countries owing primarily to the slow emergence of quality evidence on the reduction of morbidity achieved by screening and on cost-effectiveness [43].

Most sources of clinical guidance are consistent in advising that the introduction of a screening instrument will have no beneficial impact [88] unless it forms an integral part of a well-resourced process with clear pathways to diagnostic assessment and effective, accessible treatment.

Conclusion

Early identification of depressive illness in the perinatal period is highly desirable for the prospects for individual recovery and for ameliorating the longer-term impact of the condition on the lives of women, infants and partners. As an identification strategy, screening with a specialised perinatal depression screening tool should be strongly considered, as long as a clear and established process exists to ensure that all women with positive results will be connected with adequate, accessible diagnostic and treatment resources. A further condition is the sufficient training of health professionals in the recognition of clinical symptoms and the conduct of psychosocial assessment. In brief, the available evidence suggests that systematic, well-resourced screening approaches that use specialised perinatal screening tools and training of health professionals (a combination of identification strategies 1 and 5 identified by Hewitt et al. [47]) are likely to be the most acceptable to perinatal women and to give the most effective outcomes in clinical practice.

Practice points

- Screening in isolation will have no beneficial effect and must be part of an integrated, well-resourced process with clear pathways to diagnostic assessment and effective accessible treatment for those diagnosed with depression.
- Screening is best conducted in the context of broader psychosocial factors with consideration given to common co-morbid conditions (e.g. anxiety).
- Providing women with prior notification of the screening and assessment process will increase its acceptability.
- Systematic follow up of all positive screening results with the offer of a diagnostic stage procedure is imperative.
- Sufficient training for health professionals in screening and wider psychosocial assessment is essential.

Research agenda

- Further high-quality evaluations of the clinical effectiveness of screening programmes.
- Research identifying the best time(s) to screen and the optimal screening interval between repeat screens.
- Further evaluation of the usefulness of brief triage tests with high negative predictive value in a two-step screening process.
- Identification of key components of successful perinatal depression screening programmes.

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