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Review

Depression screening and patient outcomes in pregnancy or postpartum: A systematic review

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ABSTRACT

Objective: Clinical practice guidelines disagree on whether health care professionals should screen women for depression during pregnancy or postpartum. The objective of this systematic review was to determine whether depression screening improves depression outcomes among women during pregnancy or the postpartum period.

Methods: Searches included the CINAHL, EMBASE, ISI, MEDLINE, and PsycINFO databases through April 1, 2013; manual journal searches; reference list reviews; citation tracking of included articles; and trial registry reviews. RCTs in any language that compared depression outcomes between women during pregnancy or postpartum randomized to undergo depression screening versus women not screened were eligible.

Results: There were 9,242 unique titles/abstracts and 15 full-text articles reviewed. Only 1 RCT of screening postpartum was included, but none during pregnancy. The eligible postpartum study evaluated screening in mothers in Hong Kong with 2-month-old babies ($N = 462$) and reported a standardized mean difference for symptoms of depression at 6 months postpartum of 0.34 (95% confidence interval = 0.15 to 0.52, $P < 0.001$). Standardized mean difference per 44 additional women treated in the intervention trial arm compared to the non-screening arm was approximately 1.8. Risk of bias was high, however, because the status of outcome measures was changed post-hoc and because the reported effect size per woman treated was 6–7 times the effect sizes reported in comparable depression care interventions.

Conclusion: There is currently no evidence from any well-designed and conducted RCT that screening for depression would benefit women in pregnancy or postpartum. Existing guidelines that recommend depression screening during pregnancy or postpartum should be re-considered.

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Introduction

Depression is a leading cause of disability among women [1], and pregnancy and postpartum are considered periods of high risk [2,3]. The prevalence of major depressive disorder during pregnancy and postpartum is similar to rates among women during non-childbearing periods [4–8], but is associated with poor maternal and infant outcomes and, thus, has important consequences for depressed women, as well as for infants and families [3,9–13]. Depression during pregnancy and postpartum is challenging to identify and manage, and healthcare professionals may prioritize health issues more directly related to pregnancy and the well-being of the foetus and infant. Improving depression care during pregnancy and postpartum is a priority, and one solution that has been proposed is routine depression screening [14–16].

Screening for depression, however, is controversial [17–21]. In the context of primary care, the United States Preventive Services Task Force (USPSTF), in 2009, recommended screening for depression only when staff-assisted depression care programs are in place to ensure accurate diagnosis and effective treatment and follow-up [22]. In contrast, in their 2010 guideline, the United Kingdom (UK) National Institute for Health and Care Excellence (NICE), did not recommend routine screening, but rather that primary care physicians be alert to possible depression in their patients [23]. In 2013, the Canadian Task Force on Preventive Health Care's (CTFPHC) updated guideline recommended against screening for depression [24].

In 2010, the American College of Obstetricians and Gynecologists recommended that depression screening be "strongly considered" in both pregnancy and the postpartum period; the report noted that there was not sufficient evidence to support a "firm recommendation." [14] Also in 2010, the American Academy of Pediatrics recommended that paediatricians screen new mothers for depression during well-child visits in the 6 months following birth [15]. Neither of these recommendations, however, was based on a systematic review of the evidence. In the UK, the National Screening Committee [25,26] determined in 2001, and again in 2010, that there is no evidence that postnatal screening would improve health outcomes. A 2007 NICE guideline, on the other hand, recommended routine administration of 2 questions about depression at several points during pregnancy and postpartum [16]. This recommendation was based on a review of screening tool accuracy, however, and not on evidence from any randomized controlled trials (RCTs) that depression screening would improve health outcomes.

Systematic reviews on depression screening in pregnancy and postpartum also differ in their findings. A 2009 UK Health Technology Assessment (HTA) systematic review included 5 studies, 3 of which were RCTs, and concluded that it was not possible to disentangle the effects of screening from the effects of enhanced depression care interventions that were linked to positive screens [27,28]. In contrast, the authors of a 2013 United States Agency for Healthcare Research and Quality (AHRQ) systematic review [2], consistent with the USPSTF recommendation for primary care, concluded that there was evidence for screening when staff-assisted depression care supports are in place, but not without these supports [22]. This conclusion was based on 5 studies, 4 of which were RCTs. The different conclusions of the HTA and AHRQ reviews are not surprising when one considers that the sets of trials included in the reviews did not overlap. None of the RCTs in the HTA systematic review [27,28] were included in the 2013 [2] or 2005 [29] versions of the AHRQ review and vice versa, though neither review addressed this discrepancy.

Criteria that should be met before a screening program is considered for clinical practice are well-established [25,26,33,34]. It is reasonable to consider screening for important and prevalent conditions that can be effectively treated and that cannot be readily detected without screening. For screening to be considered, screening methods should be accurate and carry only a tolerably small risk of false positive results. Screening is an intervention, and, thus, for screening to be recommended for practice benefits in excess of potential harms should be demonstrated in well-conducted randomized controlled trials.

One reason why existing systematic reviews on depression screening have generated discordant results is that they have not defined the characteristics necessary for trials that test the effects of screening [20,21,30]. A test of a screening program must include the use of a screening tool with a defined cut-off to select patients for further evaluation and, if appropriate, treatment [17,31]. In addition, since screening is an intervention that is carried out to identify depressed patients who have not yet been diagnosed and treated, patient eligibility and randomization should occur before the screening intervention is conducted, and only patients without a current diagnosis and treatment should be included. In order to separate the effects of screening from the effects of providing additional or enhanced depression care, similar depression management options should be available to patients with depression in the screening arm of the trial and patients in the non-screening arm who are identified as depressed by patient report or unaided clinician diagnosis.

The USPSTF has described adverse effects that could occur with depression screening, including false-positive results with potentially expensive referrals and diagnostic workups in some women without depression, costs and adverse effects of treatment for women misdiagnosed as depressed, and the potentially adverse effects of labelling [22]. Only one study has examined the cost-effectiveness of routine depression screening during pregnancy or postpartum, and the authors of the study concluded that the cost-effectiveness ratio would substantially exceed normal cost-effectiveness thresholds, even if screening would improve depression outcomes [32].

Before a screening program is initiated, there should be evidence from high-quality RCTs of improved health outcomes that would justify the cost and potentially adverse effects of screening [26,31,33,34]. Thus, the objective of the present systematic review was to evaluate whether there is evidence from well-conducted RCTs that depression screening programs designed to improve depression care in pregnancy or postpartum would reduce depression symptoms compared to usual care. An explicit set of criteria were used to determine whether RCTs evaluated depression screening, including (1) the determination of patient eligibility and randomization prior to screening; (2) the exclusion of patients with a current depression diagnosis or existing depression treatment; and (3) the provision, in both trial arms, of similar depression management options to patients determined to be depressed via screening or other mechanisms.

Methods

Search strategy

The CINAHL, EMBASE, ISI, MEDLINE, and PsycINFO databases were initially searched on August 29, 2010. Searches were updated on July 26, 2012 and April 1, 2013. Searches included articles published January 2007 or later because we based our search strategy on the strategy used in the HTA systematic review [27,28], which included articles published through February 2007. See Appendix 1 for search terms. In addition to database searching, manual searching was performed on reference lists of included articles, relevant systematic reviews (Appendix 2), and 45 selected journals (January 2013 through May 2013; Appendix 3). We also tracked citations of included articles using Google Scholar [35] and searched clinical trial registries to attempt to identify unpublished depression screening RCTs. We searched the ClinicalTrials.gov trial registry ("depression AND screen*" in any field) and the World Health Organization's International Clinical Trials Registry Platform ("depression AND screen*" in title) from inception to April 30, 2013. The WHO registry platform is a central database that provides access to many different clinical trial registries from around the world. Search results were downloaded into the citation management database RefWorks