

Beyond screening: assessment of perinatal depression in a perinatal care setting

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Received: 10 December 2008 / Accepted: 15 May 2009 / Published online: 5 June 2009
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Abstract Although screening for perinatal depression substantially improves detection, screening alone does not improve treatment entry or outcome. This paper summarizes a pilot evaluation of the feasibility and patient acceptance of on-site diagnostic assessment in perinatal care settings for women who screen positive for perinatal depressive symptoms. The model included screening, assessment by the perinatal care provider, an algorithm to guide decisions, guidelines for evidence-based antidepressant treatment, support through phone and webbased consultation, and quality monitoring to track and remedy “missed opportunities” for screening and assessment. A mean of 17.1% of women screened were identified as having depressive symptoms in need of further assessment. Of those identified, a mean of 72.0% received a diagnostic assessment on site. A mean of 1.4% of patients refused on-site diagnostic assessment. It is feasible to incorporate assessment for depression into perinatal care. This paves the way for better engagement in treatment, and better clinical outcomes.

Keywords Perinatal depression · Screening · Pregnancy · Postpartum

Introduction

Major depression is a highly prevalent disorder during pregnancy and postpartum. About 9.4–12.7% of women are estimated to develop major depressive episodes during pregnancy (Gaynes et al. 2005). Untreated antenatal depression has been associated with altered fetal heart rate and movement (Dieter et al. 2008) and increased risk of preterm labor (Li et al. 2009). Compared to controls, offspring of mothers with antenatal depressive symptoms are more irritable at birth (Zuckerman et al. 1990) and show ongoing alterations in stress responsiveness and temperament later in childhood (Huot et al. 2004). Postpartum maternal depression, with a period prevalence of 21.9% within a year after giving birth (Gaynes et al. 2005), can adversely affect mother–infant interactions and the subsequent emotional and cognitive development of the child (Murray et al. 2003; Beebe et al. 2008).

Due to increased contact with health professionals, and often increased health care coverage, pregnancy could be an opportune time to detect and treat depression (Smith et al. 2004). However, depression is under-recognized and under-treated in obstetric practices (Coates et al. 2004). A study of 3,000 obstetric/gynecologic outpatients found that 77% of those who met criteria for psychiatric diagnoses (predominantly depression) were not recognized as having a psychiatric problem by their health care providers (Spitzer et al. 2000). A subsequent study of women receiving prenatal care found that only 1 in 5 women who met criteria for psychiatric diagnoses (predominantly depression) had chart documentation of receiving mental health

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treatment (Kelly et al. 2001). Another study of 3,472 pregnant women screened for depression in obstetric settings found that 20% scored above the cut-off, but only 13.8% of those reported receiving any treatment for depression (Marcus et al. 2003).

A number of studies demonstrate improved detection of perinatal depressive symptoms by formal screening. Rates of “positive” screens (scores above a pre-defined validated cut-off) in studies of pregnant women have typically been within the range of 13%–25% (Birndorf et al. 2001; Carter et al. 2005; Marcus et al. 2003; Smith et al. 2004). In a study directly comparing screening scores with clinical diagnoses, health care providers had only recognized 26% of the pregnant women who screened positive (Smith et al. 2004). Similarly, a formal screening tool detected postpartum depression in 35.4% of study participants, while routine clinical evaluation at the six-week postpartum check-up detected depression in only 6.3% of a comparable control group, a statistically significant difference (Evins et al. 2000).

These data about the prevalence, risks of untreated symptoms, under-detection by routine clinical examination, and improved detection with formal screening, amply demonstrate that perinatal depression warrants routine screening per criteria established by the United States Preventive Services Task Force (USPSTF) (Pignone et al. 2002) and the United Kingdom National Screening Committee (Buist et al. 2002). This has prompted large scale screening initiatives, including legislative mandates for perinatal depression screening. However, while screening tools can detect women in need of further assessment, they cannot in themselves make diagnoses or rule out confounding diagnoses. Finding women who “screen positive” for depression is only helpful if those women are subsequently assessed, diagnosed and successfully treated. Studies to date show that without systematic follow-up, perinatal depression screening does not improve treatment entry or clinical outcome (Gilbody et al. 2008). Patient acceptance of depression screening is high, but patient acceptance of assessment by a mental health professional after screening positive appears to be low. In a study addressing this issue (Carter et al. 2005), 92.5% of perinatal women offered the Edinburgh Postnatal Depression Scale (EPDS) completed and returned the tool. However, of those who scored above the screen’s cut-off, only 30.6% agreed to assessment. Of those, less than half of those actually attended the assessment interview, despite researchers’ efforts to minimize logistical obstacles. These data underscore the need to develop, implement and test effective models of assessing pregnant women scoring positive on depression screens, and engaging women in assessment and treatment.

A promising model developed in primary care settings, but not yet tested in prenatal care settings, is a *stepped-care disease management model*. These are comprehensive

systems of formal screening, assessment and treatment of disorders in which patients who do not respond adequately to initial interventions receive higher-level interventions. A meta-analysis of ten randomized, controlled trials of Depression Disease Management Models in primary care settings found significant improvement in quality of care, patient and provider satisfaction, and depression outcomes as compared to usual care (Neumeyer-Gromen et al. 2004). By contrast, less comprehensive programs—e.g. programs that educated primary care providers about depression but did not develop ongoing health care delivery systems—have had no demonstrable impact on prescribing practices or patient outcomes (Lin et al. 1997; Dowrick and Buchan 1995; Callahan et al. 1994; Davis and Taylor-Vaisey 1997; Tiemens et al. 1999).

This paper summarizes the development and pilot evaluation of the Perinatal Depression Management Program (PDMP), a model for on-site diagnostic assessment and treatment in perinatal care settings for women who screen positive for depressive symptoms. The objectives of this pilot study were to determine:

- whether introducing the PDMP would improve detection of women with depressive symptoms at the pilot site
- whether it would be feasible for prenatal care providers to incorporate formal diagnostic assessment for depression into perinatal care visits, given the tools and structure provided by the PDMP
- whether introducing the PDMP would improve patient acceptance of mental health assessment, as compared to acceptance rates described in prior studies of other models

This study was approved by the Institutional Review Board of the University of Illinois at Chicago.

Materials and methods

Study setting

The project took place at Alivio Medical Center, a Federally Qualified Health Center in Chicago that serves over 16,000 patients per year and assists in over 1,000 births annually. Its patient population is 94% Mexican American, and is 90% monolingual in Spanish. Ninety percent of its patients are at or below the 200% federal poverty level; 13.2% are unemployed. At the time of project initiation, Alivio’s clinical staffing included family practice physicians (4 full time equivalent, or FTE), midwives (4 FTE), obstetrician/gynecologists (2.1 FTE), pediatricians (2.1 FTE), internists (1.0 FTE), nurse practitioners (1.0 FTE), and a social worker (1.0 FTE), all fluent in English and Spanish.

Baseline data and needs assessment

At the start of the study, prior to the introduction of the PDMP, Alivio did no formal depression screening. Among the 5,439 female patients of reproductive age served by the clinic during the calendar year prior to study initiation, only 24 (0.4%) received a psychiatric diagnosis. During a needs assessment process, Alivio clinicians identified the following obstacles as interfering with identification and treatment of perinatal depression in their patients:

- Lack of provider training: No Alivio clinicians had been specifically trained to screen for, diagnose or treat perinatal depression.
- Financial/linguistic: Many Alivio patients lack health insurance. Due to catchment area restrictions, only a small percentage of patients are eligible for mental health services at the local community mental health center. Other mental health centers within their catchment areas have few Spanish-speaking providers.
- Family/partners: Many of Alivio's patients would not be permitted by their partners to attend a mental health clinic. In addition, many patients reported that, after being given prescriptions for psychotropic medication, they did not fill the prescriptions because relatives told them not to.
- Misconceptions about mental illness and its treatment: Many patients express such misconceptions—e.g. fear that psychotropic medication is addictive.

Description and development of the intervention

The research team developed a perinatal depression disease management model that included:

1. Screening with a validated perinatal depression screening tool, the Edinburgh Postnatal Depression Scale (EPDS) (Cox et al. 1987), at the first prenatal visit, at 28 weeks' gestation, and at postpartum visits to either the mother's care provider or the baby's pediatrician.
2. A brief, semi-structured diagnostic assessment by the perinatal care provider, based on relevant parts of the Structured Clinical Interview for Diagnosis (SCID) (First et al. 1997). The model called for assessment of all patients scoring above 10 on the EPDS, a cut-off found in validation studies to have sensitivities ranging from 0.48–1.00 and specificities ranging from 0.71–0.89 (Miller et al. 2009).
3. An algorithm (Fig. 1) to guide decisions about which depressed patients to treat in the prenatal care setting, and which to refer to mental health services, based on symptom severity and comorbidity.

4. Reference guidelines for evidence-based prescribing of antidepressant medication by trained physicians and advanced practice nurses
5. A phone and web-based Peripartum Mental Health Consult Service, allowing prompt access for prenatal care providers to expert mental health consultation
6. A system for referring patients to mental health care when treatment administered within the prenatal care setting failed to achieve an adequate response.
7. A Quality Monitoring system to track “missed opportunities” for screening and assessment.

The project began with a three-month planning period, in which a multidisciplinary team worked out project logistics. The team decided that medical assistants would administer and score screens, then flag positive screens for perinatal care providers by placing them at the front of the patient's chart accompanied by a blank assessment tool. The perinatal care provider would conduct the assessment during the perinatal visit, and document the disposition (on-site treatment or referral) in a checkbox at the end of the assessment tool. In cases where the mother had been screened during a pediatric visit, assessment was conducted by a midwife.

On-site treatment would be offered by the provider during the visit. The provider would have rapid access to expert mental health consultation by phone or online to guide treatment provision. For patients meeting criteria for referral instead of on-site treatment (e.g. severe symptoms, complex comorbidity), a case manager would facilitate the referral.

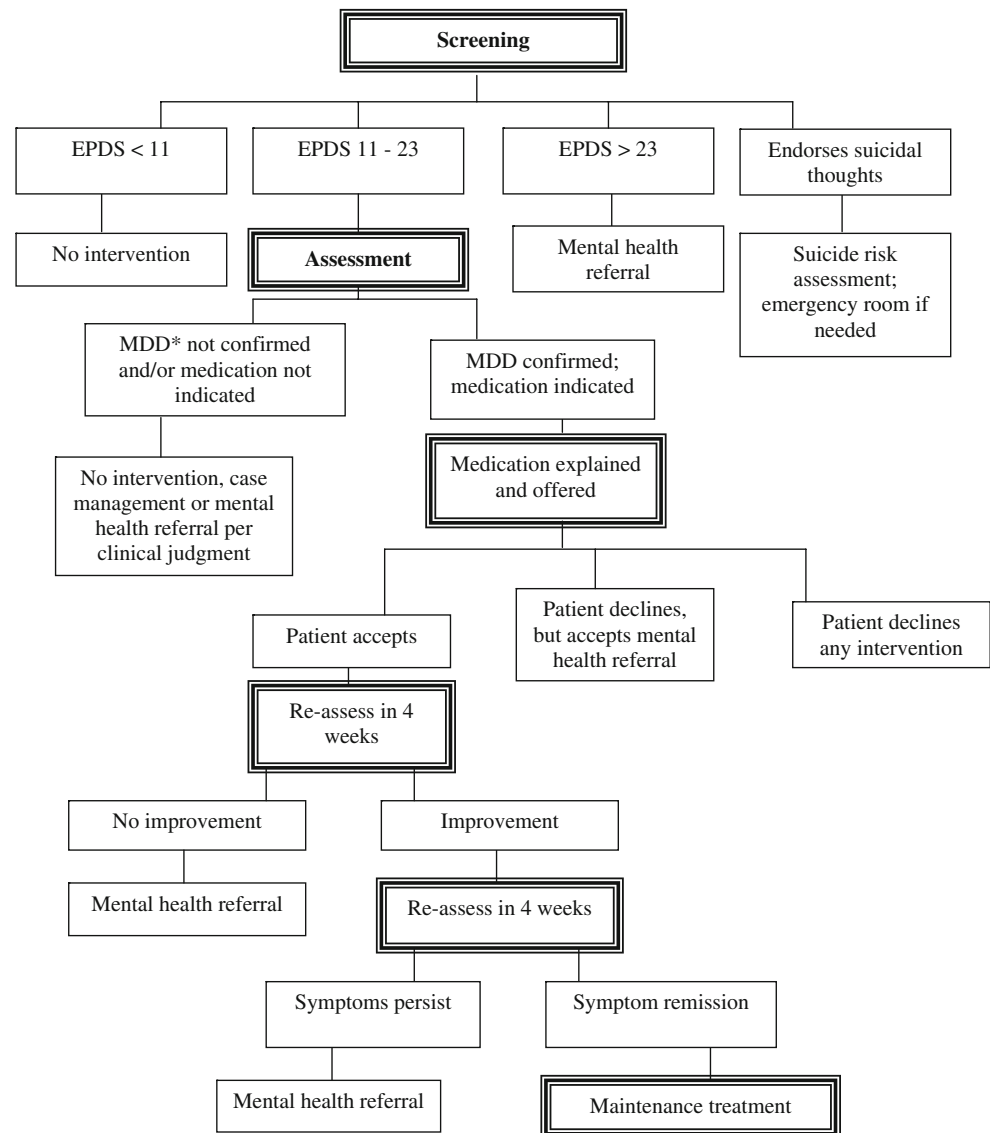
All clinic health care providers and staff were trained via an introductory half-day workshop, followed by specific advanced workshops on special topics, such as pharmacotherapy of perinatal depression, for relevant subgroups. A Quality Monitoring system tracked service provision to perinatal patients, defined as Alivio outpatients who were pregnant or within 1 year after giving birth. The system tracked what percent of perinatal patients were screened, and what percent of women with positive screens had formal diagnostic assessments on site that were documented in their medical records. The project team reviewed these data monthly to ascertain reasons for “missed opportunities” for screening and assessment, and to address obstacles.

Results

Detection of perinatal depression

Screening data for the first 7 months of the PDMP are reported in Table 1. Among women eligible for screening, a mean of 62.5% completed screens, with a range of 35.1%–84.0%

Fig. 1 Perinatal depression management program. Note: Steps within double border boxes are key steps that are completed within a perinatal clinic. *MDD = major depressive disorder



month to month. A mean of 17.1% of participating women were identified as having depressive symptoms in need of formal diagnostic assessment (based on EPDS scores above 10), with a range of 12.1%–20.5% month to month

Feedback during Quality Monitoring meetings identified that nearly all missed opportunities for screening were logistical in nature — e.g. blank screening tools not placed in the proper bins for easy access, screens completed but

Table 1 Perinatal depression screening and assessment in a primary care clinic after implementation of a perinatal depression management model

	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7
# of perinatal women	294	280	256	332	329	395	305
% of women screened	84.0%	78.9%	35.1%	58.7%	53.5%	59.5%	67.5%
% scoring above cut-off	12.1%	16.7%	20.0%	20.5%	16.0%	19.1%	15.0%
% assessment completed & documented	76.7%	70.3%	78.0%	75.0%	60.7%	68.9%	74.2%
% assessment either not offered or not documented	20.0%	27.0%	22.2%	22.5%	25.0%	24.4%	25.8%
% patients refusing assessment	3.3%	2.7%	0%	0%	3.6%	0%	0%
% assessment status unknown	0%	0%	0%	2.5%	10.7%	6.7%	0%

not entered into the database, or a new medical assistant not yet trained in the screening procedure.

Feasibility of incorporating assessment into prenatal care

Table 1 shows rates of on-site assessment during the first 7 months of the PDMP. A mean of 72.0% of women screening above the EPDS cut-off received formal, complete diagnostic assessments that were documented in their medical records, with a range of 60.7% to 78.0% month to month. Feedback during monthly Quality Monitoring meetings identified lack of provider time as the key obstacle when assessments were not completed.

Patient acceptance of assessment

As shown in Table 1, among women who scored positive on the EPDS, rates of refusing assessment ranged from 0% to 3.6% month to month, with a mean of 1.4%. Feedback during monthly Quality Monitoring meetings identified lack of patient time as the key reason for refusals—e.g. a mother had to hurry back to care for a child, and had no time to extend her clinic visit for an assessment.

Discussion

After the introduction of a stepped-care depression management model, the per cent of prenatal patients identified as having significant depressive symptoms (mean 17.1%) was comparable to known prevalence rates for perinatal depressive symptoms. This is in striking contrast to the clinic's pre-intervention baseline of diagnosing only 0.4% of women of reproductive age within its patient population as having any psychiatric disorder. These pilot data suggest that introducing a depression management model into a perinatal care setting markedly improved clinicians' ability to detect women with symptoms of perinatal depression.

Of note, the highest percent screened occurred in the first month of implementation, reflecting an initial burst of enthusiasm. This "honeymoon period" was followed by a marked dip in screening in the third month. When this dip was detected by the Quality Monitoring system, logistical reasons for the drop-off could be ascertained, and changes were introduced that improved subsequent screening rates.

In this fast-paced, high-volume perinatal care environment, the PDMP allowed for incorporating formal depression diagnostic assessment into perinatal care visits in most cases. This was accomplished by training providers, streamlining the assessment process, providing a user-friendly assessment tool, incorporating the tool into the clinic flow, and facilitating ease of documentation via a checklist at the end of the assessment tool.

Patient acceptance of formal diagnostic assessments in this model was extremely high (mean 98.6% acceptance among patients offered assessment). This stands in marked contrast to the low patient acceptance rates found in prior studies using other models (Bruglia et al. 2000; Zlotnick et al. 2001; Carter et al. 2005). These findings accord with a prior study of perinatal patients showing that only 29.4% of subjects with positive depression screens reported having discussed emotional issues with their obstetricians, but 82.4% said they would be willing to do so (Birndorf et al. 2001).

Although this pilot study did not formally assess reasons for the high acceptance rates, feedback from participants as part of the Quality Assurance process suggested that the PDMP reduced barriers that previously limited women's access to mental health assessment. By receiving assessment from their perinatal health care providers during perinatal visits, women did not have to find additional child care and transportation. They did not have to surmount financial, linguistic and cultural barriers to care, did not feel stigmatized, and did not have to attend a separate mental health visit against the wishes of partners or other family members.

Conclusions

Current large-scale efforts to implement widespread screening for perinatal depression are laudable and justified by prevalence and risk data. However, in order to lead to effective treatment, screening must be linked with realistic, acceptable systems of diagnostic assessment. This pilot study demonstrates that it is feasible, and well-accepted by patients, to incorporate depression assessment into prenatal care in the context of a disease management model. This allows perinatal clinics to identify patients with clinically relevant major depressive disorder, eliminating the referral of women with "false positive" screens to unnecessary specialty services, and paving the way for on-site treatment of women with mild to moderate unipolar depression. This is a key step toward engaging women in treatment for perinatal depression, thus ultimately reducing the adverse effects of untreated depression for women and their children.

Acknowledgements This work was supported by the U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Maternal and Child Health, Division of Healthy Start and Perinatal Services [P12MC07726: State Grants for Perinatal Depression, FY2004 and FY2006].

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