The 3 item anxiety subscale of the Edinburgh Postpartum Depression Scale may detect postnatal depression as well as the 10 item full scale

QUESTION

Question: Does the Edinburgh Postpartum Depression Scale (EPDS-3) anxiety subscale perform as well as the full 10 item EPDS scale in screening for postnatal depression, and how do other brief screening alternatives compare?

Patients: Mothers (n = 199; 14–26 years) who made ≥1 visit to the Colorado Adolescent Maternity Program with an infant ≤6 months old.

Setting: Primary care paediatric clinic for children of adolescent mothers, Colorado, USA; time period not stated.

Test: EPDS-3 brief screening tool for postnatal depression. The EPDS-3 is a subscale of the full 10 item EPDS which includes the three anxiety related items. Other brief alternatives that were compared were the depressive EPDS subscale (EPDS-7) and the two items of the EPDS that resemble the Patient Health Questionnaire (EPDS-2). The score on each scale was multiplied by 10 and divided by the number of items used, so that a cut-off of ≥10 could be used for all scales. In addition, a cut-off of ≥3 was used for the EPDS-2 raw score. Mothers were assessed during well-child visits, and could be assessed more than once during the study period.

Diagnostic standard: Full 10 item EPDS; a score ≥10 indicated a need for referral for evaluation of depression.

Outcomes: Sensitivity, specificity, negative predictive value, positive predictive value, internal reliability (Cronbach's alpha), stability (kappa; based on 97 women who were screened twice, on average 2.1 months apart).

METHODS

Design: Diagnostic cohort study.

Table 1 Performance of EPDS subscales for identifying excessive postnatal depressive symptomatology

Screening tool	Sensitivity (%)	Specificity (%)	NPV (%)	PPV (%)	Reliability (Cronbach alpha)	Stability (kappa)
EPDS-3	95	80	98	56	0.8	0.6
EPDS-2 cut-off ≥3	48	97	88	79	*	0.4
EPDS-2 cut-off ≥10	80	95	94	77	*	0.4
EPDS-7	59	100	88	79	0.9	0.6

EPDS, Edinburgh Postpartum Depression Scale; NPV, negative predictive value; PPV positive predictive value.
*EPDS-2 had poor reliability across covariate groups.

MAIN RESULTS

20.6% (41/199) of the mothers screened positive for elevated depression symptoms and were referred for depression evaluation (EPDS score ≥10). Compared with the full EPDS, the EPDS-3 (anxiety) subscale had a high sensitivity (95%) and negative predictive value (98%). The EPDS-3 displayed better sensitivity and negative predictive value than alternative brief forms of the EPDS (EPDS-2 and EPDS-7; see table 1). The EPDS-3 showed lower specificity and positive predictive value than the other brief alternatives (table 1). The reliability and stability (based on 97 repeated assessments) of the EPDS-3 was comparable with the full EPDS (EPDS-3: Cronbach alpha = 0.8; kappa = 0.6; full EPDS: Cronbach alpha = 0.9; kappa = 0.5).

CONCLUSIONS

The EPDS-3 may be a useful, time efficient screening tool for detecting postnatal depression in primary care.

ABSTRACTED FROM

Correspondence to: Karolyn Kabir, MD, University of Colorado and Health Sciences Center, Children's Hospital, Department of Pediatrics, 1056 E 19th St, Box B025, Denver, CO 80218, USA; kabir.karolyn@tchden.org

COMMENTARY

There has been considerable interest in finding the briefest possible methods of identifying depression and anxiety in both primary and secondary care.[1] The 2007 NICE guidelines recommended use of an adaptation of the Patient Health Questionnaire-2 (PHQ2).[2] Remarkably there were no publications on these ultrashort methods in perinatal settings at the time of this recommendation but two since that time. Kabir and colleagues have taken a reductionist approach by comparing three abbreviated versions of the EPDS against the EPDS 10 item version; one version contained just the seven depression questions (EPDS-7), one contained three anxiety questions (EPDS-3) and one version had two questions which were very similar to the PHQ2. There is no attempt to calculate optimal cut-offs using an receiver operating curve but thresholds were chosen to minimise false negatives.

The original EPDS identified 41 probable depressions and 158 probable non-depressions. The authors do not present summary accuracy statistics but a post hoc calculation using the fraction correct statistic (overall accuracy) is helpful. This shows that the 7 item depression version identified 91% of these probable cases and non-cases, compared with 87% for the EPDS-2 (cut-off ≥3), 83% for the 3 item anxiety version and 80% for the EPDS-2 (cut-off ≥2). The authors actually recommend the EPDS-3 because of its high negative predictive value (NPV) of 98%. The NPV can be misleading if judged alone because a test is most useful as a rule-out method when nearly all those without the index condition test negative. This is the basis for the "clinical utility index" which in this case reveals the EPDS-7 to be the optimal rule-in and rule-out method although the EPDS-2 (at a cut-off ≥3) was not far behind.

A recent similarly powered study compared the PHQ2 with the EPDS and found the positive predictive value (PPV) of the PHQ2 was only 24% but the NPV was 99%.[3] Together these studies offer preliminary evidence that ultrashort methods can be used as a first step rule-out screen in perinatal settings but both studies are limited by the absence of a robust diagnostic interview as a gold standard.

Alex J Mitchell, MBBS, BMedSci, MSc, MRCPsych
University of Leicester, Leicester, UK

Competing interests: None.

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