Research report

Detecting postnatal common mental disorders in Addis Ababa, Ethiopia: Validation of the Edinburgh Postnatal Depression Scale and Kessler Scales

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ABSTRACT

Background: The Edinburgh Postnatal Depression Scale (EPDS) has been used successfully across diverse cultural settings. However, a recent study found poor validity in detecting postnatal common mental disorders (CMD) in rural Ethiopia. Using similar methodology, the study was replicated in the capital, Addis Ababa.
Methods: Semantic, content and criterion validity of EPDS, Kessler Scale-6 (K6) and Kessler Scale-10 (K10) were assessed in postnatal women attending vaccination clinics. Criterion validation was undertaken on 100 postnatal women, with local psychiatrist diagnosis of CMD using the Comprehensive Psychopathological Rating Scale (CPRS) as the criterion measure.
Results: The areas under the Receiver Operating Characteristic (AUROC) curve for the EPDS, K6 and K10 were 0.85 (95%CI 0.77–0.92), 0.86 (95%CI 0.76–0.97) and 0.87 (95%CI 0.78–0.97), respectively. The EPDS generated sensitivity, specificity and misclassification rates of 78.9%, 75.3% and 24.0%, respectively at an optimal cut-off point of 6/7. The corresponding values for the K6 were 84.2%, 82.7% and 17.0% at a cut-off point of 4/5, and for K10 were 84.2%, 77.8% and 21.0% at a cut-off point of 6/7, respectively. The internal reliability Cronbach's alpha for the EPDS, K6 and K10 were 0.71, 0.86 and 0.90, respectively.
Limitations: Not all postnatal women bring their infants to vaccination clinics which may limit generalisability.
Conclusion: The EPDS, K6 and K10 all demonstrated acceptable clinical utility as screening scales for postnatal CMD in an urban setting in Ethiopia. The marked urban–rural difference in EPDS performance within Ethiopia highlights the difficulty of applying urban-validated instruments to rural settings in LAMIC.

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1. Introduction

Postnatal common mental disorders (CMD), characterised by significant levels of depressive, anxiety and somatic symptoms, are a common complication of the puerperium. A meta-analysis of studies from non-African settings estimated the prevalence of postnatal CMD to be 13% (O'Hara and Swain, 1996). Findings from sub-Saharan Africa indicate a prevalence of postnatal CMD comparable to, if not higher than, that found in Western settings, ranging from 10 to 34.7%

(Aderibigbe et al., 1993; Adewuya et al., 2005; Cooper et al., 1999; Cox, 1983; Nhiwatiwa et al., 1998).

The Edinburgh Postnatal Depression Scale (EPDS) has been established as a useful screening questionnaire for detecting postnatal depression in many different cultures (Cox et al., 1987). The EPDS does not require prior psychiatric training which favours its application in settings where mental health professionals are scarce. Furthermore, the emphasis on non-somatic symptoms of mental distress would be expected to reduce the risk of misclassifying usual postnatal somatic experiences as depressive symptomatology; for example aches and pains post-delivery, fatigue and poor energy levels resulting from broken sleep looking after a newborn baby. The

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EPDS has been validated in several low and middle-income countries (LAMIC) (Aydin et al., 2004; Jadresic et al., 1995; Lee et al., 1998; Pollock et al., 2006; Regmi et al., 2002), including countries of sub-Saharan Africa (Hanlon et al., 2008b; Lawrie et al., 1998; Uwakwe, 2003; Weobong et al., 2007).

A recent study of EPDS in a rural Ethiopian community has questioned the instrument's validity in this setting (Hanlon et al., 2008b). Conceptual difficulties were prominent and might be explained by the low levels of exposure to Western education (only 12.9% of women had received any formal education and 82.2% were non-literate). In the same study, the Self-Reporting Questionnaire-20 (SRQ-20) was superior as a measure of postnatal CMD. The authors posit that the lack of somatic manifestations of CMD in the EPDS compared to SRQ, and the more complex question structure, contributed to validity problems.

In the present study, a further validation of EPDS was conducted in Ethiopia, using comparable methodology to the first study but located in an urban primary care setting with high levels of literacy and exposure to education. The opportunity was taken to test the validity of two relatively new instruments for detection of CMD, Kessler 6 and 10 (K6 and K10), on the basis of their simplicity of administration and the extensive studies supporting their use in community samples (Furukawa et al., 2003; Kessler et al., 2002).

2. Methods

2.1. Setting

The validation studies were conducted at Addis Ketema and Selam Primary Healthcare Centres in the capital Addis Ababa, Ethiopia. These health centres serve the low-income urban community. They provide the following services for the local community: non-complicated deliveries, antenatal and post-natal check-ups, vaccination and family planning services.

2.2. Semantic validity

The same Amharic version of EPDS which has ten items was used as in the previous Ethiopia validation study (Hanlon et al., 2008b). The ten questions of the K10 scale, of which the six items of the K6 scale are a sub-set, ask respondents how frequently they experienced various symptoms of psychological distress in the past one month. The K10 was translated into Amharic and back-translated by two independent sets of bilingual Ethiopian psychiatry residents. A meeting of the translators, a psychologist and an Ethiopian academic psychiatrist was held to obtain the Amharic version used for content validation.

2.3. Content validity

The translated EPDS, K6 and K10 scales were administered to a sample of 30 postnatal women attending vaccination clinics at Addis Ketema Health centre. All the instruments were applied in an interview format and respondents were prompted to give examples and explain their answers. Three criteria were used to indicate a problematic item:

1. The respondent disclosed that the meaning was not clear.
2. The respondent gave a response but struggled to elaborate.
3. The respondent gave examples that indicated misconceptualisation of the question.

2.4. Criterion validity

One hundred and five consecutive postnatal women attending for the second, third and fourth vaccinations of their infants were recruited. This timing coincides with the sixth, tenth and fourteenth postnatal weeks respectively. The EPDS, K6 and K10 were administered by three health centre nurses who received half a day of training. The nurses interviewed the women prior to the psychiatrist interview.

The criterion measure of postnatal CMD was psychiatric assessment by two Ethiopian final year psychiatry residents using the Comprehensive Psychopathological Rating Scale (CPRS) (Asberg et al., 1978). The CPRS has been found to have excellent inter-rater reliability (Kappa = 0.82) in detecting CMD in antenatal women, and women in psychiatric and medical settings in Ethiopia (Hanlon et al., 2008a). The clinicians conducted their usual psychiatric assessment, as well as completing the 67 reported and observed items of the CPRS to help standardise assessment. Caseness for postnatal CMD was determined on the basis of any combination of depressive, anxiety and/or somatic symptoms present at a clinically significant level. The psychiatrists were also asked to document the presence of any axis I diagnoses according to DSM-IV, regardless of whether or not participants were categorised as CPRS cases of CMD. Both of the psychiatrists were experienced in the application of the DSM-IV but were additionally supplied with the DSM-IV criteria and asked to record the following diagnoses where present: depressive disorders (296.2/296.3/296.9/300.4), anxiety disorders (300.x), acute stress reaction (308.x), adjustment disorder and post-traumatic stress disorder (309.x). The psychiatrists were blinded to the result of the EPDS, K6 and K10 interview conducted by the nurses.

2.5. Statistical analysis

Data analysis was conducted using SPSS for windows version 12.0. Descriptive analysis was used for sociodemographic characteristics. Receiver Operating Characteristic Curves for the criteria of local clinician diagnosis of CMD caseness (using CPRS), DSM-IV major and minor depression, and for any DSM-IV diagnosis were examined for all the three instruments (EPDS, K6 and K10). Sensitivities, specificities and misclassification frequencies at the optimal cut-off scores were determined. Internal consistency was assessed using Cronbach's alpha (Cronbach, 1951).

2.6. Ethical approval

Approval was obtained from the ethical committee of the Faculty of Medicine, Addis Ababa University. Informed written consent was obtained and interviews were conducted in private.

3. Results

3.1. Semantic validity

The details of semantic validity of EPDS in Ethiopia have been previously reported (Hanlon et al., 2008b). Translation