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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.

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 postnatal 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

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of item 10 of the K10 was problematic as the phrase 'feeling that everything was an effort' initially conveyed 'feeling that you are compelled or forced to do things'.

3.2. Content validity

3.2.1. EPDS

Items one and two were most poorly understood. Repeating the items did not help in most of the cases. Prompting examples to a given response also indicated that some items were misunderstood.

Item one — 'I have been able to laugh and see the funny side of things.' The concept of this item was unclear and was modified to: '*have you been able to laugh when funny things happened?*' which was easily understood by the remaining twenty participants in the content validation.

Item two — 'looked forward with enjoyment to things': The Amharic phrase '*negerochen bedesta woyem benafqot sitebabequ*' which appeared semantically equivalent turned out to be difficult to understand, implying 'expecting something great to happen or expecting to see something you are missing'. Nearly half of respondents responded "not at all", giving examples such as: "because there was nothing 'big' that was going to happen like winning a lottery", "because I am living with my family and I was not expecting a visit". Even after modification, the question remained to be difficult for many of the participants.

Item ten — 'The thought of harming myself has occurred to me': three respondents indicated that they were embarrassed to be asked. All of those who felt embarrassment did not have the symptom; however, respondents who endorsed the symptom indicated that they were relieved to be asked.

3.2.2. K6 and K10

The tenth item of the Kessler Scale was found to be the most difficult, although other items also required modification.

> *Item one — '…about how often did you feel depressed?' and item two — '…about how often did you feel so depressed that nothing could cheer you up?'*

The more technically correct word "*Yemedebet*", meaning, "feeling depressed", was not understood by the majority of mothers and was thus replaced by a more popular Amharic word "*Yemedeber*" together with an additional option of "*Yemekefat*" (feeling unhappy). This significantly improved the clarity of the questions during subsequent interviews. Item two was clearer because of the additional phrase "that nothing could cheer you up". In some cases, respondents were not able to appreciate the difference between item one and item two.

> *Item five — '…about how often did you feel restless or fidgety?' and item six — '…about how often did you feel so restless that you couldn't sit still?'*

There were semantically equivalent Amharic words for "restless" and "fidgety", however, many respondents failed to understand these words or gave invalid explanations for their response. For example:

> "No, I was not restless. I have no chores to do so I rest for most of the day".
>
> "Yes, I was restless. I had to go to different shops to buy items that I could not find."
>
> "Yes, I was restless, because I had to move around to console a crying baby."

Attempts made to rephrase the difficult terms were not effective and so the questions were kept as in the original.

> *Item seven — '…about how often did you feel worthless?'*

Many respondents did not understand the term "worthless" which was then rephrased as "having no value". The latter was easily understood.

> *Item eight — '…about how often did you feel tired out for no good reason?'*

Some respondents overlooked the phrase "for no good reason" and responded "Yes" even when they had good reason to feel tired. Thus "without working much" replaced that phrase.

> *Item ten — '...about how often did you feel everything was an effort?'*

In most cases, the question needed multiple repetitions. Even after the item was read out again, half of the respondents misunderstood the question. For example, in many cases of the "No" answers the justification given were: "because the maid does most of the chores". "Nobody forces me to do things, I do it by my own will" or a "Yes" answer was justified "I was forced to pay rental fee". For these reasons the question was modified as follows: '... you feel that everything (e.g. talking, getting up, walking etc.) was an effort?'

3.3. Criterion validity

Two women refused to participate because of lack of time, two others did not wait for the clinician's interview and one had incomplete data for the K10 and K6. This left 100 women with complete data for the final analysis.

3.3.1. Socio-demographic characteristics

The mean age (SD). of the women was 25.3 years (5.1) and ranged between 18 and 38 years. Twenty one percent had no education at all; the mean years of education (SD) was six (4.3). Fifty seven percent of women were originally from places other than Addis Ababa. The majority of respondents (61%) indicated that Amharic was their first language but respondents who had other languages as their first language spoke Amharic fluently. Fifty seven percent of women were primiparous. The median duration after delivery was 69 days (inter-quartile range (IQR): 45) (Table 1).

3.3.2. EPDS, K6 and K10 scores

The frequency distribution of scores was positively skewed for all three instruments. The median EPDS score (inter-quartile range (IQR) was 10 (8) in cases and 4 (5.5) in non-cases. For K6, the median score (IQR) was 10 (5) in cases and 0 (3.5) in non-cases, whereas for K10 the median (IQR) score was 29 (8) in cases and 3 (6) in non-cases.

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Table 1
Socio-demographic characteristics of postnatal women participating in the criterion validation study ($n = 100$).

Characteristic	*N (%)*
Age (in years)	36 (36%)
18–22	36 (36%)
23–27	15 (15%)
28–32	13 (13%)
33–38	
Place of origin (birth)	43 (43%)
In Addis	57 (57%)
Outside Addis	
Parity	57 (57%)
Primiparous	36 (36%)
Para II–III	7 (7%)
Para IV+	
First language	61 (61%)
Amharic	24 (24%)
Guragigna	6 (6%)
Oromiffa	5 (5%)
Siltigna	4 (4%)
Others	
Years of education	21 (21%)
None	29 (29%)
1–6	45 (45%)
7–12	5 (5%)
>12	

3.3.3. CPRS scores and DSM-IV diagnoses

The frequency distribution of the total CPRS scores was positively skewed. The median score (IQR) in cases was 25 (9) and 5 (6) in non-cases.

According to the clinician interview using CPRS, 19 (19%) of the mothers were classified as CMD cases, whereas 32 (32%) of the mothers had one or more DSM-IV diagnosis. The most common DSM-IV diagnosis was major depressive disorder (11%), followed by adjustment disorder (6%). The total number of mothers who had either major or minor depressive disorder was 13 (13%) (Table 2). The majority (84.6%) of cases of depressive disorder were considered to be CMD cases but only 57.9% of women with postnatal CMD had a DSM-IV depressive disorder.

3.3.4. Validation of the EPDS, K6 and K10 Scales against criterion of CPRS case of CMD

The EPDS had an AUROC of 0.85 (95%CI 0.77 to 0.92). The AUROCs for K6 and K10 were marginally higher at 0.86 (95%CI 0.76 to 0.97) and 0.87 (95%CI 0.78 to 0.97) respectively (Fig. 1) and (Table 4).

Table 2
The frequency and percentage of DSM-IV diagnoses among postnatal women participating in the criterion validation study.

DSM-IV diagnosis	*n*	*%*
Depression	13	40.7
Major	11	34.4
Minor	2	6.3
Mixed anxiety depression	3	9.4
Dysthymia	2	6.3
Anxiety disorder	8	25.0
Generalized anxiety disorder	1	3.1
Specific phobias	5	15.6
Anxiety disorder NOS	2	6.3
Adjustment disorder	6	18.8
Total	**32**	**100**

The optimal cut-off point for EPDS was 6/7, which gave a sensitivity of 78.9% and specificity of 75.3%. For the K6, the optimal cut-off point of 4/5 generated superior sensitivity and reasonable specificity, 84.2% and 82.7% respectively. The K10 generated sensitivity and specificity of 84.2% and 77.8% respectively at optimal cut-off point of 6/7 (Table 3).

3.3.5. Validation of the EPDS, K6 and K10 Scales against criterion of DSM-IV major or minor depressive disorder

The AUROC for EPDS with DSM-IV depressive disorder as criterion was virtually the same as that obtained when CPRS case of CMD was the criterion: 0.86 (95%CI 0.78 to 0.98). For K6 the AUROC improved to 0.91 (95% CI 0.84 to 0.98) and, similarly, for K10: 0.91(95% CI 0.84 to 0.98) (Fig. 2) and (Table 4).

The optimal cut-offs for the EPDS, K6 and K10 were 7/8, 5/6 and 7/8 respectively. At these cut-off points all the three instruments had high sensitivities and moderate specificities (Table 3).

3.3.6. Validation of EPDS, K6 and K10 Scales against criterion of 'any DSM-IV diagnosis'

All three scales performed less well when the criterion of 'any DSM-IV diagnosis' was used. EPDS yielded the lowest AUROC and K10 was the best of the three (Fig. 3) and (Table 4).

The optimal cut-off points for EPDS, K6 and K10 were 5/6, 1/2 and 4/5 respectively. EPDS generated the lowest sensitivity (71.9%) and specificity (66.2%) (Table 3).

3.4. Internal consistency of the EPDS, K6 and K10

EPDS had a Cronbach's alpha of 0.71, which increased to 0.79 when the first and second EPDS items were removed from the analysis. The split half reliability for the first five EPDS items was 0.44 and that for the second five items was 0.68. The Cronbach's alpha for K6 was 0.86 and that for K10 was 0.90.

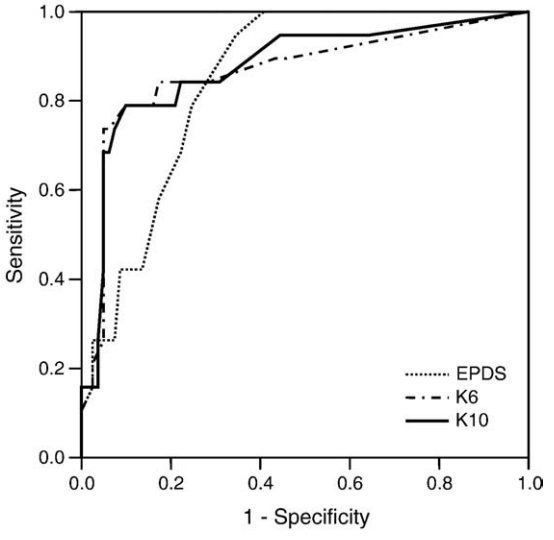

Fig. 1. ROC curve for the EPDS, K6 and K10 against local clinician diagnosis of CMD (with CPRS).

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Table 3
Comparison of EPDS, K6 and K10 optimal cut-off points (in bold) using criteria of local clinician diagnosis with CPRS, DSM-IV major and minor depression, and any DSM-IV diagnosis.

EPDS			K6			K10		
Cut-off	Sensitivity %	Specificity %	Cut-off	Sensitivity %	Specificity %	Cut -off	Sensitivity %	Specificity %
Local clinician case of CMD (with CPRS)								
5/6	94.7	65.4	3/4	84.2	75.3	5/6	84.2	70.4
6/7	**78.9**	**75.3**	**4/5**	**84.2**	**82.7**	**6/7**	**84.2**	**77.8**
7/8	68.4	77.8	5/6	78.9	84.0	7/8	78.9	79.0
DSM-IV major and minor depression								
6/7	92.3	73.6	4/5	92.3	79.3	6/7	92.3	74.7
7/8	**84.6**	**77.0**	**5/6**	**84.6**	**80.5**	**7/8**	**84.6**	**75.9**
8/9	76.9	79.3	6/7	76.9	85.1	8/9	76.9	81.6
DSM-IV any diagnosis								
4/5	75.0	58.8	0/1	84.4	60.3	3/4	90.6	63.2
5/6	**71.9**	**66.2**	**1/2**	**84.4**	**63.2**	**4/5**	**75.0**	**75.0**
6/7	65.6	79.4	2/3	75.0	77.9	5/6	75.0	76.5

3.5. Correlation between EPDS, K6 and K10 scores

The EPDS was moderately correlated to both the K6 and K10, (correlation coefficient, 0.59).

4. Discussion

This study found that three screening scales for postnatal CMD, the EPDS, K6 and K 10, all had good validity in an urban sample of postnatal women in Ethiopia. All the scales performed better in this urban Ethiopian setting than was demonstrated for either the SRQ-20 or EPDS in rural Ethiopia. However, the EPDS still had poorer sensitivity and specificity than the other scales and had poorer internal consistency, largely due to the previously identified problems with items 1 and 2 (Hanlon et al., 2008b).

Local psychiatrists identified 19% of the women as cases of postnatal CMD. This prevalence estimate is close to that found in the previous Ethiopian validation studies from a rural community sample (16 and 17%) (Hanlon et al., 2008b), although higher than the 11.3% prevalence found in rural Ghana, both studies using the criterion measure of CPRS diagnosis of postnatal CMD (Weobong et al., 2007). However, this prevalence estimate cannot be generalised to other postnatal women in Ethiopia as fewer than two-thirds of women bring their infants for vaccinations (Central Statistical Authority [Ethiopia] and ORC Macro, Ethiopia] and ORC Macro, 2006).

The concept of postnatal CMD may have greater public health relevance than the narrower diagnosis of 'postnatal depression' (Hanlon et al., 2008a). Over 40% of women with postnatal CMD were diagnosed as having DSM-IV mental disorders other than depressive disorder. Therefore, restricting diagnosis to depressive disorder alone risks missing this significant proportion of CMD cases. Conversely, a higher

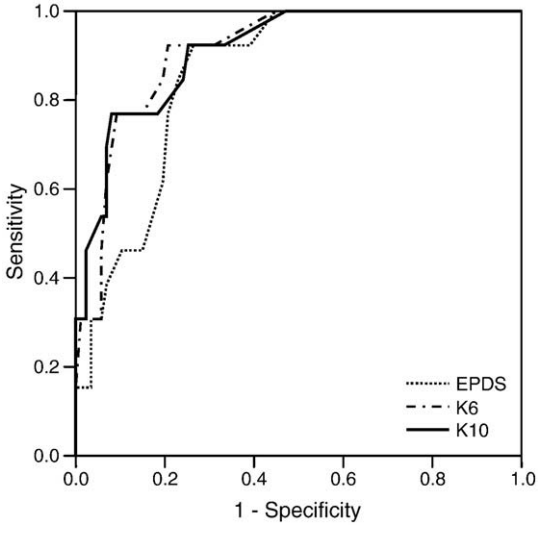

Fig. 2. ROC curve for the EPDS, K6 and K10 against DSM-IV major and minor depression diagnoses.

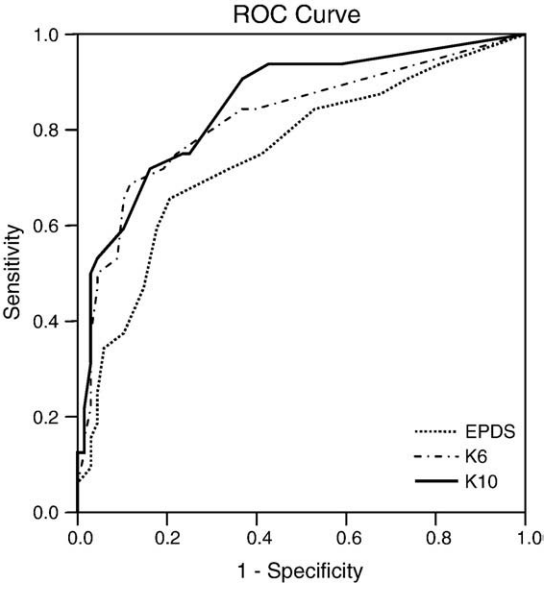

Fig. 3. ROC curve for the EPDS, K6 and K10 against any DSM–IV diagnosis.

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proportion of women fulfilled diagnostic criteria for 'any DSM-IV diagnosis' (32%) than was estimated to have clinically significant CMD (19%). This is in keeping with the previous studies from rural Ethiopia and further supports the contention (Hanlon et al., 2008b) that reliance on DSM criteria risks over-diagnosis of mental disorder in this population.

Based on the criterion measure of postnatal CMD, all three instruments had good psychometric properties as indicated by the AUROC of 0.85 and above. The estimated AUROC for EPDS is comparable to findings from other settings (Pollock et al., 2006; Weobong et al., 2007). However, the optimal cut-off point identified for EPDS, 6/7, is lower than most of the reported cut-offs from other EPDS validation studies (Eberhard-Gran et al., 2001) (Table 4). Given the difficulties attaining adequate semantic and content validity, it is possible that respondents tended to give a 'no' response when the questions were not clear to them, even if the symptom was actually present. Problems with the performance of EPDS as a scale were evident in terms of internal consistency; Cronbach's alpha of 0.71. Similar difficulties with EPDS were also reported in the only other validation of EPDS from a rural, sub-Saharan Africa setting, although the optimal cut-off was 10/11 in that study (Weobong et al., 2007). There was little difference between the K6 and K10 Scales in the detection of postnatal CMD, despite the additional four items included in the latter. Both K6 and K10 had superior sensitivity compared to EPDS at the optimal cut-off points, with K6 having the best specificity.

The AUROCs for all three scales, EPDS, K6 and K10, increased when DSM-IV major and minor depressive disorders were used as the criteria rather than postnatal CMD, although the difference was small. Some authors have emphasised the importance of inclusion of somatic items in screens for depression in sub-Saharan Africa due to a preference for somatic idioms of distress (Ebigbo, 1982; Martyns-Yellowe, 1995). Somatic symptoms have been reported to be potentially useful in detecting depression in Ethiopia (Hanlon et al., 2008b). On the other hand, others have argued that somatic symptoms are physiological in the puerperium and hence yield low validity measures (Stewart et al., 2008; Weobong et al., 2007). In this study, it was the scales including anxiety and somatic symptoms, the K6 and K10, rather than the scale specifically designed to detect depressive disorder, the EPDS (Cox et al., 1987), which performed best in the detection of the narrower concept of DSM-IV depressive disorder. This supports the view of depressive, anxiety and somatic symptoms existing on a single dimension at the community level (Goldberg, 1996). When considering the criterion of 'any DSM-IV diagnosis', all three scales had poorer criterion validity compared to the criteria of CMD caseness or DSM-IV depression, with EPDS performing most poorly.

Table 4
Comparison of criterion validity of EPDS, K6 and K10 at the optimal cut-off points.

	EPDS	K6	K10
Local clinician diagnosis of CMD (with CPRS)			
Optimal cut-off	6/7	4/5	6/7
Positive predictive value	42.9%	53.3%	47.1%
Negative predictive value	93.8%	95.7%	95.5%
Misclassification rate	24.0%	17.0%	21.0%
AUROC	0.85 (0.77–0.92)	0.86 (0.76–0.97)	0.87 (0.78–0.97)
DSM-IV major and minor depression			
Optimal cut-off	7/8	5/6	7/8
Positive predictive value	35.5%	39.3%	34.4%
Negative predictive value	97.1%	97.2%	97.1%
Misclassification rate	22.0%	19.0%	23.0%
AUROC	0.86 (0.78–0.94)	0.91 (0.84–0.98)	0.91 (0.84–0.98)
DSM-IV any diagnosis			
Optimal cut-off	5/6	1/2	4/5
Positive predictive value	50.0%	51.9%	58.5%
Negative predictive value	83.3%	89.6%	86.4%
Misclassification rate	21.0%	30.0%	25.0%
AUROC	0.75 (0.64–0.86)	0.82 (0.73–0.92)	0.85 (0.77–0.94)

The validity of EPDS was markedly better in urban Addis Ababa (AUROC 0.85) compared to the previous EPDS validation conducted in rural Butajira (AUROC 0.62) (Hanlon et al., 2008b). This study has, therefore, demonstrated an important difference between rural and urban populations within Ethiopia which has wider implications for use of Western-derived instruments across these differing settings. Language could be a factor, as only a minority (<20%) of Butajira women had Amharic as their first language compared to 60% of women from Addis Ababa. However, the stark difference in formal education is likely to make a more significant contribution, 24% in Addis Ababa with no education, compared to >80% in the Butajira validation studies, increasing women's exposure to Western concepts of mental health and illness. This is similar to findings from 50 years ago in Nigeria (Leighton et al., 1963) where manifestations of mental disorder were more similar to those seen in Western settings when participants were literate compared to those who were non-literate. Most studies validating Western-derived measures of mental health in LAMIC are conducted in urban settings although may be applied more widely. This study highlights the need for better understanding of the obstacles to applying such instruments to more rural populations, where educational levels are low, as well as cautioning against assuming generalisability of validity across settings, even within the same country. This is a particular challenge for Ethiopia given the diversity of ethnic groups and languages (Central Statistical Authority [Ethiopia] and ORC Macro, Ethiopia] and ORC Macro, 2006) as well as the low levels of education in rural areas.

Although the K10 and K6 Scales performed well in the detection of postnatal CMD in urban Ethiopia and showed good internal consistency, it is important to note that some items on the K6 and K10 Scales could not be modified to more culturally understandable versions. Exploratory qualitative studies are required to improve understanding of the most appropriate idioms of distress in this setting and, from there, to develop the most valid tools for the detection of postnatal CMD.

5. Conclusion

The Amharic versions of the K6 and K10 have better validity than EPDS as screening tools for detection of postnatal CMD, as well as DSM-IV depressive disorders, in

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urban Ethiopia. The brevity and high content and criterion validity of the K6 may make it the preferred instrument for use in the busy primary care setting.

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Conflict of interest

All authors declare that they have no conflicts of interest.

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