Asia Pacific Family Medicine, 2004; **3** (1-2): 9-18


ORIGINAL ARTICLE

# Validation of the Malay Version of Edinburgh Postnatal Depression Scale for Postnatal Women in Kelantan, Malaysia

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**Abstract**
*Aim* Validation of the Malay version of the Edinburgh Postnatal Depression Scale (EPDS)
*Methods* A validation study was done involving 52 mothers who were at 4-12 weeks post-delivery. The women completed the Malay versions of EPDS and the 30-item General Health Questionnaire (GHQ). They were then assessed with the Hamilton Depression Rating Scale (HDRS) and Clinical Interview Schedule (CIS). Psychiatric diagnoses were made based on ICD-10 criteria. The validity of EPDS was tested against this clinical diagnosis and the concurrent validity against the Malay version of 30-item GHQ and HDRS scores was also evaluated.
*Results* The best cut-off score of the Malay version of EPDS was 11.5 with the sensitivity of 72.7% and specificity of 92.6 %.
*Conclusion* The Malay version of EPDS is a valid and reliable screening tool for PND.

## Introduction

Depressive illness is relatively common in the first 6 months following delivery. Recent studies showed that 10 - 15 % of women suffered from PND.(1, 2, 3) Although PND is 100 times more prevalent than puerperal psychosis, most go undetected. This failure of detection is obviously a cause for much clinical concern.

The lack of suitable instruments for psychiatric surveys is a major problem faced by many researchers and students in higher institutions of learning. Most of the instruments available were developed in the West. These instruments must be validated so that they can be used reliably in the local community.

The 10-item Edinburgh Postnatal Depression Scale (EPDS) was chosen because it is relatively simple, short and takes less than 10 minutes to be filled up by respondents, making it practical for use in busy postnatal wards and home visits. (4) Primarily, it has been developed to assist primary health care professionals to detect PND.

Thompson et al. compared 3 rating scales, used previously in the diagnosis of PND. 5 The rating scales were EPDS, HADS (Hospital Anxiety and Depression Scale) and HDRS. In this study, the performance of EPDS was found to be superior to that of HADS in identifying RDC (Research Diagnostic Criteria)-defined Depression, and on par with the observer-rated HDRS, which is also matched for sensitivity to change in mood state over time.

Comparison of the EPDS with an interview diagnosis made according to strict criteria have been carried out in three communities in Britain. (4, 6, 7) These comparisons have demonstrated the validity of the EPDS both for identifying women who are depressed and for ruling out depression.

The EPDS has been validated in Australia, Italy, South Africa, Netherlands, Hong Kong and Sweden. (8 - 13) From the validation studies, this scale has a sensitivity of 67-100% and a specificity of 49-95%. These studies used the gold standard of a psychiatry interview to diagnose depression clinically as a means of determining the sensitivity, specificity and the positive predictive value of EPDS.

Studies from the West have shown that scores above 12 were likely to be due to depressive illness of varying severity. (4,6,7) The study in Chinese population in Hong Kong has taken the cut-off point of 9/10. Our study will attempt to delineate the cut-off point appropriate for the Malay population in Kelantan.

**Methods**

This is a cross-sectional study in Klinik Kesihatan Kubang Kerian, Kota Bharu, Kelantan, Malaysia. In February 2000, 52 mothers at 4-12 weeks post-delivery were approached at the time of their visits to the Health Centre for routine postpartum examination or immunization for their infants. All mothers who were eligible were given the Malay versions of EPDS, GHQ and HDRS. They were then reassessed with CIS by the author who was trained by the psychiatrists involved in the study to establish the diagnosis of depression. Relevant diagnosis was based on the Tenth Edition of the International Classification of Disease (ICD-10): Classification of Mental and Behavioral Disorders-Clinical descriptions and Diagnostic Guidelines WHO (1992). Positive cases were discussed and confirmed by the psychiatrists involved in the study. Positive cases were also referred to the psychiatrist for further management.

**Instrument:**

**a) Edinburgh Postnatal Depression Scale (EPDS)5**

It is a self-rated questionnaire, consisting of ten short statements of common depressive symptoms and using a Likert-type format for responses. The respondent underlines the possible response closest to how she has been feeling for the past one week. Each question has a scale from 0-3 reflecting the severity of the symptoms. Possible scores on the EPDS range from 0-30.

**Translation of the EPDS**

The EPDS was translated into Malay language using back-translation method. Four schoolteachers who are bilingual in both English and Malay translated the EPDS into Malay. Three doctors who are also bilingual translated the Malay version back into English. Both scales, original and back translated English, were compared to determine accuracy of translation.

**Pretest and Revision of Questionnaire**

The translated questionnaires were tested on 20 mothers in the postnatal wards in Hospital Universiti Sains Malaysia. Each mother was assessed for possible misunderstanding of question.

**b) Thirty-item General Health Questionnaire (GHQ) (14)**

The Malay version of the 30-item General Health Questionnaire (GHQ 30) was used in the validation study. It is a self-reporting questionnaire for use in primary care settings or general-out patients. It consists of broad symptoms of psychiatric disorders in the general population. Each item has four possible responses and the recommended " GHQ scoring" is 0-0-1-1. (14)

In Malaysia, the instrument has been validated in the local population using English and Malay versions. (15,16) Maniam used a cut-off point of 6/7 instead of 4/5 in the original GHQ manual whereas Abdul Hamid and Hatta recommended 7/8 to be the desired cut-off. (15,16)

In the study by Abdul Hamid and Hatta, the sensitivity and specificity of the Malay version GHQ was 96.0% and 93.3% respectively. (16)

**c) Hamilton Rating Scale for Depression (HDRS) (17)**

This is designed to be filled at the end of the unstructured interview lasting about an hour. It consists of 17 items; each rated on a 3- or 5- point scale. The scale mainly measures behavioural and somatic aspects of depression rather than psychological and cognitive ones. It is not designed as a diagnostic instrument.

**d) Clinical Interview Schedule (CIS)14**

This is a semi-structured psychiatric interview, which assesses ten reported symptoms (a 5-point scale) during the previous week and 12 abnormalities. The interview was designed for community surveys rather than with psychiatric patients.

### Statistical Analysis

Data entry and analysis was done using SPSS software version 9.0. The validity of EPDS was tested against GHQ and HDRS by using correlational analysis. The specificity, sensitivity and positive predictive value of EPDS was measured based on CIS.

## Results

In February 2000, 54 women were approached at Klinik Kesihatan Kubang Kerian and invited to participate in the validation study. Two women refused to participate and 52 women agreed to participate in the study. All of the women were married. No mother had a history of a handicapped or stillborn baby. The mean postpartum period for the women was 7.1 ± 3.0 weeks. The EPDS score for the sample range from 7-19 with the mean of 7.1± 4.2

Table 1 showed there was a significant difference in all the mean score of scales that were used in this study between the non-depressed and depressed group.

**Table 1 Mean scores of EPDS, GHQ and HDRS in relation to CIS**

| Scales | Non-depressed (N=41) Mean score ± SD | Depressed (N=11) Mean score ± SD | P-value |
|---|---|---|---|
| EPDS | 5.7 ± 3.1 | 12.5 ± 3.5 | < 0.00 |
| GHQ | 2.6 ± 2.5 | 8.2 ± 4.3 | < 0.00 |
| HDS | 4.5 ± 3.6 | 15.6 ± 4.5 | < 0.00 |

The EPDS was highly correlated with GHQ ($r = 0.61$, $p = 0.00$) and HDRS ($r = 0.74$, $p = 0.00$) (Figure 1 and 2).

Twenty one percent (11 women) fulfilled the ICD-10 criteria for depression in the present study. Four of the women fulfilled the criteria for major depression (mild depression = 2 women, moderate depression = 2 women), while 7 were classified as other depressive episodes. EPDS scores were validated using ICD-10 criteria.

### EPDS with Minor and Major Depression.

Table 2 shows the sensitivity, specificity and positive predictive value of EPDS based on the ICD- 10 criteria for both major and minor depression and with major depression only.

**Table 2 Specificities, sensitivities and positive predictive values of EPDS scores based on both major and minor depression and major depression only (ICD-10 criteria)**

| EDPS Score | Sensitivity % | | Specificity % | | Positive Predictive Value % | |
|---|---|---|---|---|---|---|
| | Both major and minor depression | Major depression only | Both major and minor depression | Major deprsession only | Both major and minor depression | Major depression only |
| 6.5 | 100 | 100 | 60.9 | 52 | 40.7 | 14.8 |
| 7.5 | 90.9 | 100 | 65.8 | 58.3 | 41.7 | 16.7 |
| 8.5 | 81.8 | 100 | 78 | 70.8 | 50.0 | 22.2 |
| 9.5 | 72.7 | 100 | 90.2 | 83.3 | 66.7 | 33.3 |
| 10.5 | 72.7 | 100 | 92.6 | 85.4 | 72.7 | 36.4 |
| 11.5 | 72.7 | 100 | 95.1 | 87.5 | 80.0 | 40.0 |
| 12.5 | 54.5 | 75 | 100 | 93.7 | 100 | 50.0 |
| 13.5 | 27.2 | 25 | 100 | 95.8 | 100 | 33.0 |
| 14.5 | 27.2 | 25 | 100 | 95.8 | 100 | 33.0 |
| 15.5 | 18.1 | 25 | 100 | 97.9 | 100 | 50 |

At 11.5 cut-off point, the sensitivity and specificity of EPDS for detection of both minor and major depression is 72.7% and 95.1%. The use of higher cut-off point (12.5) would reduce the sensitivity to 54.5% but increased the specificity and positive predictive value to 100%. Lowering the cut-off point of EPDS to 10.5 would reduce the specificity to 92.6% and positive predictive value to 72.7% but the sensitivity would remain the same (72.7%).

At 11.5 cut-off point, the EPDS identified all the women who had major depression only (sensitivity 100% and specificity 87.5%). Increasing the cut-off point to 12.5 would decrease the sensitivity to 75% but increased its specificity to 93.7% and positive predictive value to 50%.

**Discussion**

This study aimed to test the validity of EPDS as a screening tool to identify PND in Malaysian women. We used ICD-10 criteria through CIS, as a benchmark against which the EPDS was tested.

The use of cut-off point of 11.5 in this study was consistent with previous studies in Sweden by Wickberg et al. and South Africa by Lawrie et al. (13,10) Table 4 showed the

sensitivity, specificity and positive predictive value of the EPDS in the above studies in comparison to our study.

**Table 3 Sensitivity, specificity and positive predictive value of studies with the cut-off point for EPDS of 11.5**

| Studies | Sensitivity % | Specificity % | Positive predictive value % |
|---|---|---|---|
| Wickberg et al (1996) | 96.0 | 49.0 | 59.0 |
| Lawrie et al (1998) | 80.0 | 76.6 | 52.6 |
| This study | 72.7 | 95.0 | 80.0 |

The most important point is that with this cut-off point, the instrument was able to identify all the cases of major depression (sensitivity 100%, specificity 87.5%). Adopting the conventional 12/13 cut-off point in detecting depression for the Malay version of EPDS will have missed a higher proportion of women with PND.

It should be noted that estimates of sensitivity and specificity in this study were lower than the original study by Cox et al.5 Using a threshold of 12/13, Cox et al. reported a sensitivity of 86.0% and specificity of 78.0%. (5) Also, Harris et al. using the same threshold, reported a sensitivity of 95.0% and specificity of 93.0%. (6)

Although the sensitivity of EPDS found in this study at the cut-off point of 11.5 was lower than the two above studies, it accords with the community study done by Murray and Corother.(7) According to that study, using a cut-off point of 11.5, the sensitivity of EPDS was 76.7% and specificity was 92.5%, which is close to our study. Lowering the threshold of EPDS in this study to either 9.5 or 10.5 would not increase the sensitivity since it remains the same for the above cut-off point.

Studies also have shown that EPDS was significantly correlated with the other depression instruments like HDRS, HADS, BDI (Back Depression Inventory), MADRS (Montgomery and Asberg Depression Rating Scale), PSE (Present State Examination) and others. (12,19,6,18) The EPDS in this study was highly correlated with GHQ and HDRS. This was similar to the validation study by Boyce and Todd and Lee et al. (8,12) According to Boyce and Todd, GHQ is a 'barometer' of psychological morbidity. (8) A high correlation of EPDS with GHQ demonstrated the capacity of EPDS to measure psychological morbidity. This high correlation therefore was reassuring to find. As expected, we found that the prevalence of PND in the validation study (21.0%) was similar to the community study that we conducted after that (20.7%). (20)

The EPDS has been used extensively in other parts of the world like the United Kingdom, Australia, Germany, Chile, Italy, South Africa, Netherlands, Sweden, Hong Kong and Saudi Arabia. Our findings and those derived from overseas studies especially outside the United Kingdom provide support for validity of the EPDS in different cultural settings.

Thus, this study offered empirical evidence to support the use of EPDS as a screening tool for detection of PND in Malaysia.

**Conclusion**

The Malay version of EPDS is a valid and reliable screening tool for PND.

**Acknowledgement**

We would like to acknowledge Universiti Sains Malaysia for the grants given to do this study. We also gratefully acknowledge the cooperation of all participating workers, including medical and health officers and all categories of staffs involved in this project.

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## Edinburg Postnatal Depression Scale (EPDS)

In the past 7 days:

1. I have been able to laugh and see the funny side of things
As much as I always could
Not quite so much now
Definitely not so much now
Not at all

2. I have looked forward with enjoyment to things
As much as I ever did
Rather less than I used to
Definitely less than I used to
Hardly at all

3. I have blamed myself unecessarily when things went wrong
Yes, most of the time
Yes, some of the time
Not very often
No, never

4. I have been anxious or worried for no good reason
Not at all
Hardly ever
Yes, sometimes
Yes, very often

5. I have felt scared or panicky for no very good reason
Yes, quite a lot
Yes, sometimes
No, not much
No, not at all

6. Things have been getting on top of me
Yes, most of the time I haven't been able to cope at all
Yes, sometimes I haven't been coping as well as usual
No, most of the time I have coped quite well
No, I have been coping as well as ever

7. I have been so unhappy that I have difficulty sleeping
Yes, most of the time
Yes, sometime
Not very often
No, not at all

8. I have felt sad or miserable
Yes, most of the time
Yes, quite often
Not very often
No, not at all

9. I have been so unhappy that I have been crying
Yes, most of the time
Yes, quite often
Only occasionally
No, never

10. The thought of harming myself has occured to me
Yes, quite often
Sometimes
Hardly ever
Never

The Study was conducted in Kota Bharu, A town in the state of Kelantan, Malaysia