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Original contribution

Screening for postnatal depression in women of non-English speaking background

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Summary

Translations into Vietnamese and Arabic of the Edinburgh Postnatal Depression Scale (EPDS) were assessed to determine usefulness, acceptability and validity. Women of Arabic-speaking, Vietnamese and Anglo-Celtic background were recruited antenatally and interviewed at six weeks and six months postpartum. At each stage they completed translated versions of the EPDS and a General Health Questionnaire-30. At the two postpartum interviews, the anxiety and depression modules of the Diagnostic Interview Schedule (DIS) were completed in the appropriate language. There were no significant differences among the three groups on the EPDS, but the Vietnamese and Arabic-speaking women scored significantly higher than the Anglo-Celtic subjects on the GHQ. Fewer Vietnamese mothers met criteria for major depression or anxiety disorder, and this difference was significant at six months postpartum. The EPDS translations were acceptable to the women and appear to be suitable screening instruments for postnatal distress and depression in these populations. Threshold scores for screening purposes are discussed, but a definitive statement in this regard must await further research.

Keywords: Postnatal depression; non-English speaking background; Edinburgh Postnatal Depression Scale.

Introduction

Mood and anxiety disorders occurring postnatally which are neither of psychotic intensity nor of the transient "baby blues" variety are usually subsumed under the heading of postnatal depression (PND). Patients referred for assessment may be ultimately diagnosed as having adjustment disorders, major depression, exacerbations of dysthymia, post-traumatic stress disorder, anxiety disorders or personality disorder, or some combination of these. Such disorders are common in Western cultures and will be seen in some 10–20% of the population of mothers with infants less than one year of age. O'Hara and Swain (1996) reported a mean prevalence of depression of 12% in 12 studies using the EPDS. High levels of distress or depressive symptomatology not reaching a caseness level are noted even more frequently, especially in disadvantaged groups. Self-reported prevalence in large population studies is commonly high, e.g. 18.5% in South Australia and 20% in Christchurch, New Zealand (MacLennan et al., 1996). Around 50% do not seek any professional help (MacLennan et al., 1996) and in perhaps 30% of the sufferers the problem may become chronic.

The situation in other cultures remains unclear. Some cultures do not have a word for depression and, in many, mental illness carries such stigma that it will be denied wherever possible. It has been argued that a) non-Western societies do not experience this problem because the women are well supported by cultural rituals during the first month or longer after delivery (e.g. Stern and Kruckman, 1983), or b) those societies do not recognise this problem as a mental health one because the difficulties are well known and rituals have been established to manage them as a normal part of new motherhood (e.g. Pillsbury, 1978), and c) when carefully sought, depression is found in such cultures, but the rate is lower because the rituals offer excellent emotional and practical support, or the problem arises later, when that support is withdrawn (cf. Lee et al., 1998; Moon Park and Dimigen, 1995). In his 1978 paper, Pillsbury reported finding no evidence of depression

postpartum in Chinese women, but several more recent studies have reported high EPDS scores in 11–17% of mothers assessed between six weeks and six months postnatally. Nevertheless, it is not clear what proportion of the women would have qualified for a diagnosis of major depression by strictly defined criteria. Lee et al. (1998) used a modified Structured Clinical Interview for DSM-III-R, non-patient version (SCID-NP); Spitzer et al., 1992) to ascertain the prevalence of major and minor depression six weeks postpartum among Chinese women in Hong Kong. Of the 145 subjects assessed using the SCID, eight (5.5%) met DSM-III-R criteria for major depression, while a further nine (6.2%) met criteria for minor depression. To investigate the hypothesis that clearly structured rituals prevent or diminish the risk of PND, Moon Park and Dimigen (1995) investigated postpartum depressive symptomatology in Scottish women (Glasgow) and Korean women (Seoul and Wonju city). They used the Beck Depression Inventory (BDI; Beck and Steer, 1987) in order to include assessment of possible differential endorsement of somatic symptoms between the two groups. The Korean women were found to be more depressed.

Clearly the context of migration, especially if recent, is likely to be significant. Migrants from a particular culture, especially when their usual support network and rituals are unavailable (McCarthy and Barnett, 1997) may experience the postpartum period very differently from women in their country of origin, and many of the current transcultural studies refer to migrant groups (e.g. Thorpe, 1992; Upadhyaya et al., 1989; Watson and Evans, 1986). In an inner city multiethnic population in Melbourne, Williams and Carmichael (1985) reported 40% of the postpartum women were depressed. Migrants who had been in Australia for three years or less were particularly vulnerable. Watson and Evans (1986) assessed psychiatric morbidity in indigenous and migrant women in London during the first 14 months post-partum, using the General Health Questionnaire 30 (GHQ30; Goldberg, 1978), interviewer ratings and the mothers' own opinions. They found little difference in the symptoms experienced by the mothers in the different cultures and reasonable agreement among the three measures. The problems of the migrant women (many of whom were living in deprived circumstances), did not tend to resolve over the course of the first year, unlike those of the indigenous subjects. As those authors and others have noted, a common problem in research on this topic is the use of different methods to assess depression. A frequent finding is that the levels of "misery" in general, and depressive symptomatology are high, but is not clear whether formal illness diagnosis could be made and whether such a diagnosis would actually capture and reflect the difficulties the women are experiencing. Comparisons between migrants and women of the same culture in their own country are also confounded by the fact that, in developing countries, mortality and physical morbidity rates may be high, resulting not only in depressive symptomatology, but probably in an ongoing emphasis on physical rather than mental health. This controversial area has been reviewed by Kumar (1994). From the point of view of major depressive episode as a particular diagnosis, it has been suggested that the core symptoms are experienced in all cultures (Sartorius et al., 1983; Sen and De Jesus Mari, 1986).

The Edinburgh Postnatal Depression Scale

In many parts of the world, postnatal (and more recently, antenatal) screening for significant distress and depression is undertaken using the Edinburgh Postnatal Depression Scale (EPDS); a tool especially devised for this purpose (Cox et al., 1987). The EPDS is a 10-item self-report questionnaire which has been validated for use in English-speaking populations. Scores range from 0 to 30, with higher scores implying greater distress. This measure has been found to be not only reliable and valid in the U.K. and Australia, but very acceptable to the women themselves (Murray and Carothers, 1990; Boyce et al., 1993). A text published in 1994 (Cox and Holden) offered 11 translations of the scale, noting that only the Swedish and Dutch translations had been specifically validated (Lundh and Gyllang, 1993; Pop et al., 1992) at that time. Since then several reports have been published suggesting acceptable validity in a variety of languages and cultures.

Not all reports include estimation of the cut-off points that might be appropriate in these different populations. Guedeney and Fermanian (1995) concluded from their study that a threshold of 11/12 was more appropriate in a French population. Wickberg and Hwang (1996), validating the EPDS in a Swedish community sample against DSM-III-R criteria for major depression at three weeks postpartum, reported a sensitivity of 96%, a specificity of 49% and a positive predictive value of 59%, using a cut-off of 11/12. Lee and colleagues (1998), in the study cited

above, also validated a translation of the EPDS, suggesting a cut-off score of 9/10 as being appropriate for screening at six weeks postpartum in a Chinese population in Hong Kong. This gave a sensitivity of 82%, specificity of 86%, and a positive predictive value of 44%. Okano et al. (1996) reported that a cut-off point of 9 was appropriate for Japanese population, giving a sensitivity of 75% and a specificity of 93%. Ghubash and Abou-Saleh (1999), using a previously validated translation into Arabic of the EPDS, adopted a threshold score of 11/12 to identify cases of depression. The EPDS was administered at seven days postpartum and the Present State Examination (PSE; Wing et al., 1974) at eight and 30 weeks postpartum. Prevalence of depression (as defined by the EPDS score) was 17.8% at day seven, while caseness (PSE ≥ 5) was 15.8% at around eight weeks and 4.2% at around 30 weeks. The 15 PSE cases comprised seven with endogenous depression; four with simple depression; two with anxiety states, and two with neurotic depression.

In Australia it is now routine in many centres to screen at least once during the first six months postpartum for significant levels of distress and depressive symptoms, using the EPDS in English-speaking women. The aim of the present study was to investigate whether suitable translations of this scale might be similarly used for Arabic-speaking (this phrase is shortened to "Arabic" for the remainder of the paper) and Vietnamese women and what the appropriate cut-off points might be for these populations.

Material and methods

Anglo-Celtic, Arabic and Vietnamese women were recruited into the study during the second trimester of pregnancy from four antenatal clinics in South-Western Sydney. Female research assistants from the appropriate culture recruited the subjects and carried out the subsequent home interviews at six weeks and six months postnatally. Many families in all groups moved house over the antenatal to postnatal period and were lost to follow-up. At the initial contact, details of possible contact persons were sought, but many women, particularly the Vietnamese, were reluctant to provide this. Other subjects had to be excluded following birth complications. Two women (Arabic-speaking subjects) refused to continue when approached to complete the six-week interview.

Details of the study subjects are provided in Table 1.

Table 1. *Details of the study subjects*

Subjects	Anglo-Celtic	Arabic	Vietnamese
Initial n	128	125	126
Six-week n	105	98	113
Six-month n	84	77	96
Mean age (years)	26	28	28
Primiparous (%)	41	37	58**
Married or de facto (%)	90	100	99
Average time in Australia	lifetime	2–3 years	2–3 years
Born in Australia (%)	89***	8	0
Her mother in Australia (%)	86***	39	42
Forms completed in English (%)	96***	34	1
Illiterate in own language and in English (%)	4*	13	15

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Measures

Translation and back-translation of the EPDS followed by pilot-testing and further refinement were carried out for Vietnamese and Arabic questionnaires. Due attention was paid to conceptual and technical equivalence. A focus group of bilingual ethnic health workers, including midwives, obstetricians and psychiatrists, was consulted at each stage of the process. Translations of the General Health Questionnaire-30 item (Goldberg, 1978) were similarly obtained. Research assistants were trained to administer the anxiety and depression modules of the DIS (Robins et al., 1981). Arabic (Karam et al., 1991) and Vietnamese (Holzer, personal communication) versions were obtained for this purpose.

Since it was anticipated that some of the women might be unfamiliar with self-report questionnaires or with the concept of depression, or possibly illiterate, a Faces Scale was added. This consists of a sheet of paper with five faces depicting emotions ranging from very happy to very sad or unhappy with a brief description printed (*very happy* to *very sad*) in the appropriate language alongside. If not read aloud by the interviewer, the instruction to the respondent is to indicate which face best shows how she has been feeling in the past few weeks. At the end of the study period a sample of women from each group was interviewed regarding the cultural acceptability of the measures and their component items.

A social support questionnaire was devised to assess the emotional and practical support the woman considered she was receiving from her partner, mother, friends and relatives and to rate her degree of satisfaction with these. These data have been published elsewhere (Stuchbery et al., 1998).

Results

As is clearly shown in Table 1, the attrition rate over the course of the study is considerable. Comparison of those who dropped out of the study at the six-week stage and those who remained showed no differences on their EPDS score during pregnancy, nor on their self-reported psychiatric history. Nevertheless, for both Anglo-Celtic and Arabic women those who dropped out were younger (Anglo-Celtic: $t = -2.24$, $df = 126$, $p < 0.05$; mean age in years of stayers = 25.9, of drop-outs = 23.5; Arabic: $t = -2.29$,

Table 2. *Outcome measures at six weeks postpartum*

Measures	Anglo-Celtic (n = 105)	Arabic (n = 98)	Vietnamese (n = 113)
Reporting "baby blues" (%)	54	50	29***
EPDS mean score (SD)	6.5 (4.6)	7.4 (4.9)	7.5 (5.4)
GHQ-30 mean score	4.3 (5.5)	6.3 (5.7)*	6.6 (6.5)*
Faces Scale: sad or very sad	11.4	13.7	13.3
DIS: % with current major depression	6.7	9.2	4.4
DIS: % with current major depression or anxiety disorder	13.3	14.3	6.2
DIS: % lifetime depression	15	15	5*

*$p < 0.05$; ***$p < 0.001$.

Table 3. *Outcome measures at six months postpartum*

Measures	Anglo-Celtic (n = 84)	Arabic (n = 77)	Vietnamese (n = 96)
EPDS mean score (SD)	5.9 (5.2)	7.4 (5.3)	6.0 (5.1)
GHQ-30 mean score	3.1 (5.5)**	4.7 (4.7)	5.9 (6.5)**[a]
Faces Scale: % sad or very sad	7.2	9.1	11.5
DIS: % with current major depression	6.0	9.3	3.1
DIS: % current depression or anxiety	13.1	19.5	6.3*

*$p < 0.05$; **$p < 0.01$ ([a]significant cf. Anglo-Celtic only).

df = 123, $p < 0.05$; mean age of stayers = 29.2, of drop-outs = 24.0). At six months there was no difference between stayers and drop-outs on their six-week EPDS score, but again there was a difference in the age of the Arabic women ($t = -2.96$, df = 93, $p < 0.01$; mean age in years of stayers = 27.1, of drop-outs = 33.5). At this point it is the older Arabic women who dropped out, i.e. the reverse of the situation at the six week stage.

Table 2 shows outcome data at the six-week follow-up. Fewer Vietnamese women than Anglo-Celtic or Arabic reported experience of the "baby blues", DIS lifetime depression or DIS current major depression, the difference being significant for the "blues" ($\chi 2 = 15.98$; df = 2; $p < 0.001$) and lifetime depression ($\chi 2 = 6.97$; df = 2; $p < 0.05$). In contrast to these findings, most notably perhaps the interview (DIS) depression ratings, the Vietnamese women scored higher than the Anglo-Celtic group on the self-report scales, i.e. EPDS, GHQ and Faces, although the difference was significant for the GHQ score only ($F(2, 312) = 4.7$, $p < 0.01$). Anglo-Celtic women scored significantly lower than either Arabic or Vietnamese women (LSD: $p < 0.05$).

Outcome data at the six-months follow-up are summarised in Table 3. Vietnamese-speaking women scored significantly higher than the Anglo-Celtic on the GHQ-30 ($F(2, 253) = 5.3$, $p < 0.01$; LSD test sig.) and significantly lower than the other groups on DIS diagnosis of current anxiety or depression ($\chi 2 = 6.9$; df = 2; $p < 0.05$).

In an English-speaking population, the cut-off score of 12/13 indicates those who are likely to meet criteria for a DSM major depressive episode. Using this cut-off, the prevalence of major depression (9.5%) in the English-speaking group at six weeks postpartum is comparable with other reports, e.g. that of Boyce et al. (1993), also in a Sydney population. At six months postnatally, the rate had not fallen in this group (10.7%), whereas for the Arabic-speaking group it had risen to the prepartum level (19.5%) and for the Vietnamese group it had fallen to less than half the prepartum level (6.2%).

For primary care screening purposes, a score of >9 is usually set to indicate those requiring further assessment. This will allow inclusion of minor depressive disorders which may nevertheless be considered clinically significant at this time because of the degree of resultant dysfunction and effects on the family. Using these criteria, comparison of the three groups is reported in Table 4.

An EPDS score of zero during the pregnancy or postpartum period is not common even in a non-clinical population. At each of the three measurement points in the present study, it was the Vietnamese women who were most likely to score zero. The difference between Arabic-speaking and Vietnamese women was significant at the pre-natal (3.2% cf. 11.9%; $\chi 2 = 5.61$; df = 1; $p < 0.05$), and the six-months postnatal assessment (5.2% cf. 8.0%; $\chi 2 = 6.76$; df = 1; $p < 0.01$). Between the Anglo-Celtic and Vietnamese women, the proportion of zero scores was significantly different at six-months postpartum (9.5 cf. 21.9%; $\chi 2 = 4.18$; df = 1; $p < 0.05$).

Tables 5 and 6 show the DIS diagnoses which could have been assigned at the two postpartum

Table 4. *Comparison of group, mean and range EPDS scores at each assessment stage*

Assessment stage and EPDS score	Anglo-Celtic	Arabic	Vietnamese
Antenatal	(n = 128)	(n = 125)	(n = 126)
mean (range)	8.4 (0–26)	8.1 (0–20)	7.2 (0–20)
>9	37.5%	40%	31%
>12	21.1%	19.2%	15.9%
Six weeks	(n = 105)	(n = 98)	(n = 113)
mean (range)	6.5 (0–20)	7.4 (0–24)	7.5 (0–24)
>9	21%	25%	34.5%*
>12	9.5%	13.5%	15%*
Six months	(n = 84)	(n = 77)	(n = 96)
mean (range)	5.9 (0–26)	7.4 (0–19)	6.0 (0–23)
>9	15.5%	33.8%*	25%
>12	10.7%	19.5%	6.2%

*$p < 0.05$ (χ^2: highest v lowest rate).

Table 5. *Percentage of each group assigned a diagnosis at six weeks*

Diagnosis	Anglo-Celtic %	Arabic %	Vietnamese %
Agoraphobia[a]	8.6*	6.1	2.7*
Panic	5.7	7.1	1.8
Anxiety disorder[b]	8.6	10.2	5.3
Major depression[a]	5.7	9.2	4.4
Any	13.3**	14.3	6.2**

*$p < 0.05$; **$p < 0.01$.
[a] = DSM-III-R.
[b] = Meets DSM criteria for GAD except duration.

Table 6. *Percentage of each group assigned a diagnosis at six months*

Diagnosis	Anglo-Celtic %	Arabic %	Vietnamese %
Agoraphobia[a]	9.5	9.3	2.1
Panic	7.1	2.7	2.1
Anxiety disorder[b]	6.0	16.0*	5.2*
Major depression[a]	6.0	9.3	3.1
Any	13.1	19.5*	6.3*

*$p < 0.05$.
[a] = DSM-III-R.
[b] = Meets DSM criteria for GAD except duration.

stages of the study. The label "Anxiety disorder" indicated that at both postpartum interviews the criteria for Generalised Anxiety Disorder were met except for duration.

The DIS interview at six weeks classified five of 113 Vietnamese women, nine of 95 Arabic, and seven of 105 Anglo-Celtic women as cases of major depression. Applying these DIS criteria, sensitivity, specificity and positive predictive values at six weeks postpartum are given for a range of EPDS scores in Table 7. On this criterion, thresholds of 14/15 for Vietnamese women and 9/10 for Arabic and Anglo-Celtic women are suggested as the most appropriate for this diagnosis.

Table 7. *Group values at various EPDS thresholds using DIS criteria for Major Depression at six weeks postpartum*

EPDS	Sensitivity %	Specificity %	Positive predictive value %
Vietnamese			
7.5	100.0	59.3	10.2
8.5	100.0	63.0	11.1
9.5	100.0	68.5	12.8
11.5	100.0	85.2	23.8
12.5	100.0	88.9	29.4
13.5	100.0	91.7	35.7
14.5	100.0	94.4	45.5
15.5	80.0	96.3	50.0
Arabic			
7.5	88.9	54.7	17.0
8.5	77.8	67.4	20.0
9.5	77.8	80.2	29.2
10.5	66.7	86.0	33.3
11.5	66.7	88.4	37.5
12.5	55.6	90.7	38.5
Anglo-Celtic			
7.5	100.0	70.4	19.4
8.5	100.0	77.6	24.1
9.5	85.7	83.7	27.3
10.5	71.4	87.8	29.4
11.5	71.4	91.8	38.5
12.5	57.1	93.9	40.0

Discussion

This study was undertaken to establish Vietnamese and Arabic translations of the Edinburgh Postnatal Depression Scale which were culturally appropriate, acceptable to the women and validated against a structured psychiatric interview – the Diagnostic Interview Schedule – administered in their own language. Discussion regarding the difficulties inherent in the translation process (and the use of self-report scales in general) and the problems encountered in using the DIS are discussed elsewhere (Matthey et al., 1997). Concerns regarding the cultural sensitivity of the DIS have also been expressed by other researchers (Lopez and Nunez, 1987; Bravo et al., 1991). The high drop-out rate for all groups, but

especially the Arabic women, must be taken into consideration in the following discussion.

As noted in the Introduction, several translations of the EPDS have been published. Nevertheless, the question of the appropriate threshold values for screening and "diagnostic" purposes is not always discussed. The 12/13 level for an English-speaking population indicates those for whom a DSM (or comparable ICD) diagnosis of major depressive episode might be appropriate, and is therefore a conservative estimate of the number of postpartum respondents likely to be rendered dysfunctional by depressive (or anxious) symptomatology. It seems likely that different thresholds might be applicable in different communities, given the observed cultural variation in emotional reserve and degree of stigma attached to what might be interpreted as mental ill-health.

Of note in the present study are the lower rates of "baby blues", DSM-III major depression, anxiety disorders and lifetime reports for Vietnamese women at both the six-week and the six-month stages. It may be that Vietnamese women experience fewer mental health problems, but detailed examination of DIS questions and comparison with the self-report scales, suggests that these lower rates might also be due to the social undesirability of *verbally* reporting negative emotions (discussed further in Matthey et al., 1997). When the criteria for depressive caseness were estimated using responses to the DIS or to the GHQ, EPDS or Faces questionnaires, a cut-off point of 9/10 was suggested for Vietnamese women also. These data are reported elsewhere (Matthey and Barnett, 1997).

Ghubash and Abou-Saleh (1997) applied a threshold of 11/12 to identify cases of depression. The caseness level at eight weeks is comparable to our DIS (14.3%) and EPDS (13.5% scoring > 12) results, but the steep reduction in Dubai caseness by 30 weeks is very different from our finding that, on both EPDS and DIS, the Arabic women in Sydney continued to experience significant morbidity six months after childbirth.

Lee et al. (1998) in their Hong Kong study, reported that 11.3% of their subjects scored above the 12/13 threshold on the EPDS, although only 5.5% met DSM-III-R criteria for major depression. Depressive disorder NOS was diagnosed in 6.2%, while no-one met the criteria for dysthymia or adjustment disorder with depressed mood. They suggested a cut-off of 9/10. Although aware of the effect of the high drop-out and refusal rate, those authors also speculated that the traditional supportive rituals of "doing the month" might have postponed the onset of significant symptomatology in their subjects beyond the time of measurement (six weeks). It is also possible that, owing to the constraints of social desirability, these Chinese women, like our Vietnamese subjects, were reluctant to concede unhappiness or distress in the early postnatal period to an interviewer. As in the present study, the women seemed less constrained in responding to a self-report questionnaire.

In contrast, Yoshida and colleagues (1998) found similar rates of postpartum depression in Japanese women in England and Japanese women in Japan, using SADS and RDC criteria in psychiatrist-conducted interviews, while depression was not detected when the EPDS (translated into Japanese) was used as a screening instrument. Using 12/13 as a cut-off, sensitivity was zero, while lowering the threshold to improve sensitivity reduced specificity. They concluded that Japanese women might be reluctant to disclose depressive symptoms on a self-report scale. They also commented that the difference might be due to the exclusion of somatic symptoms from the EPDS, when, in fact, Japanese women tend to refer to physical problems and concerns about their infant rather than expressing feelings of low mood directly. Using a scale which includes somatic symptoms may be important in Asian populations and we are investigating this point further.

The high antenatal EPDS scores in the present study are noteworthy. These are in keeping with reports from the literature that distress and depressive symptomatology are as great during the pregnancy as in the postnatal period (cf. review by Green and Murray, 1994). Although a high antenatal depression score is reported to be a risk factor for postnatal depression, there also seem to be groups of women who are depressed either in the antenatal or in the postnatal period only (Green and Murray, 1994; Kumar, 1982).

Attempting to include minor depressive disorders results in much higher rates of experiencing significant symptomatology in all groups (cf. Table 4). This is in keeping with clinical experience in other disadvantaged populations (Williams and Carmichael, 1985). The South-Western Sydney Health Area, where this study was undertaken, comprises some 750,000 people including the country's highest proportion of migrants, and high levels of unemployment and single parent families. The public transport system is poor and complaints of social isolation

widespread. Finding significant degrees of distress and depression when these women are pregnant or caring for young infants would not be surprising. The challenge is to provide accessible and culturally competent care for all.

Conclusion

The EPDS translations were acceptable to the women and appear to be suitable screening instruments for postnatal distress and depression in these populations. A general level of 9/10 is suggested for threshold scores on the EPDS when this scale is used for screening in primary care situations.

Definitive statements regarding suitable cut-off points on the EPDS to signal the possibility of significant depressive illness for Arabic-speaking and Vietnamese women must await further research.

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