Validation of the Edinburgh postnatal depression scale (EPDS) in Chilean postpartum women

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ABSTRACT

A validity study of the Edinburgh Postnatal Depression Scale (EPDS) against the Research Diagnostic Criteria (RDC) was carried out on a sample of women attending a health care center in Santiago. One hundred and eight middle-class mothers filled in the EPDS and were later interviewed by the main author using the Psychiatric Assessment Schedule (PAS). The internal consistency of the EPDS was reasonably good (Cronbach’s α 0.77). Validity coefficients for the scale were calculated to determine the best case/non-case threshold which was found to be 9/10. Sensitivity, specificity and positive predictive value for this threshold were 100%, 80% and 37% correspondingly. The same best cut-off point (9/10) was found by other Chilean investigators in a sample of working-class women. The EPDS was shown to be a useful screening instrument for postnatal depression in these settings.

INTRODUCTION

In Chile, a country with a population of nearly 14 million inhabitants, 250,000 deliveries take place every year. Maternal and infant mortality and morbidity rates have declined markedly over the last decades. Today most Chilean women have routine physical check-ups throughout their pregnancies, delivery (97.4% of all deliveries take place in hospital) and the puerperium. However, the psychological well-being of mothers has not been a matter of concern.

Two recent Chilean studies found incidence rates of 9.2% and 8.8% for postpartum depression, similar to incidence rates found in developed countries, which range from 7.1% to 14%. A previous validation study of a Spanish version of the Edinburgh Postnatal Depression Scale (EPDS) conducted in Chilean working-class women, found it to be a useful instrument to detect postnatal depression with a sensitivity of 86%, specificity of 80% and a positive predictive value of 56% at a threshold of 9/10. However, this study did not use a standardized interview and did not apply sufficiently strict diagnostic criteria. One of these Chilean studies also suggests that health professionals fail to detect depressed mothers, despite being in regular contact with them.

The purpose of this study was to estimate the external validity of our own translation into Spanish of the EPDS against the criterion of the Research Diagnostic Criteria (RDC) in a sample of middle-class women.

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METHOD

Instruments

The EPDS\(^7\) is a simple, self-administered scale, which can be completed in about 5 min. It consists of ten questions, each having four possible answers which are scored 0, 1, 2 and 3 according to increasing severity of the symptom. Seven of the items are worded in such a manner that the presence of the symptom is acknowledged by a positive response. The other three items are worded in the opposite manner, and, therefore, their answering codes were reversed before the analysis. The EPDS was translated into Spanish by E.J. and then back translated into English by R.A. Both are Chilean-born but British-trained psychiatrists, working at present in Chile. The back-translation of our Spanish version was found to be almost identical to the English version by a native English-speaking psychiatrist (Prof. Rumar Kamesh, Institute of Psychiatry, London). In addition, pilot interviews with our final EPDS version (see Appendix) in 12 childbearing women, showed its acceptability and ease of administration.

A standardized psychiatric interview, the Psychiatric Assessment Schedule (PAS)\(^8\), based on the Present State Examination (PSE)\(^9\), was used as the interviewing instrument to derive the RDC criteria\(^10\) by the principal author who had been trained to use it at the Institute of Psychiatry in London.

Procedure

The study was conducted on a sample of middle-class women who attended the antenatal clinic at a University Hospital Out-patient Clinic (CEDIUC) in Santiago. All pregnant women who attended the Clinic for their regular check-ups on Mondays and Thursdays over a period of 2 months were invited to take part in this study. These women were followed up and interviewed again 2-3 months after giving birth. Data presented here correspond to this period. All interviews were conducted blindly to the EPDS scores by E.J.

Cases of depressive illness (minor or major) were defined according to RDC which was used as the 'gold standard' throughout. The following indices were calculated: Cronbach's \(\alpha\) (as a measure of internal consistency), sensitivity (the proportion of 'true' cases correctly identified by the questionnaire), specificity (the proportion of correctly identified normals), overall misclassification rate (the percentage of misclassified respondents), positive predictive value (the probability that a high scorer will be found to be case at subsequent examination) and negative predictive value (the probability that a low scorer will be found to be a non-case).

RESULTS

Characteristics of the sample

All of the 108 mothers meeting the inclusion criteria agreed to participate. The mean age of the sample was 27.7 years (SD 5.3) and most women had a stable partner (90%). Twelve per cent were professionals and almost half (44%) were housewives. Virtually all (99%) women included in the sample had secondary education and 16% of them had further education. Forty-eight per cent were primiparous and only 2% had three or more children. Eighty-six per cent had normal deliveries, 11% Caesarean sections and a further 3% had forceps deliveries.

The EPDS as a screening instrument

The internal consistency of the scale estimated by Cronbach's \(\alpha\) was 0.7722, increasing to 0.7727 if item 10 was deleted and decreasing to 0.7290 if item 8 was deleted. The lowest corrected (excluding the item itself from the total) item-total correlation was for item 10 (0.254) whereas the highest was for item 8 (0.649). Altogether, 11 women met RDC criteria for depressive illness. The validity coefficients for various cut-off points according to our criterion (RDC) are shown on Table 1.

The comparison of these indices suggests that the optimum case/non-case threshold score (best trade-off between sensitivity and specificity, favoring the former) is 9.10. Using this threshold, the sensitivity and specificity were found to be 100% and 80% respectively. If the threshold score was lowered to 8/9 all mothers with depression would be correctly identified but the proportion of correctly identified normals would decrease considerably (67%). If the chosen threshold was set at 10/11 the sensitivity would decrease to 82% and specificity would increase to 87%.

DISCUSSION

The value of the EPDS as a tool for the identification of depression in postpartum women has
been underlined in a number of studies conducted in English-speaking countries\textsuperscript{11-13}. To our knowledge, apart from a previous Chilean translation into Spanish\textsuperscript{9}, no other translation into Spanish of the EPDS has been specifically validated. As increasing evidence\textsuperscript{23,24} shows, the incidence and prevalence of postpartum depression does not differ substantially in developing and developed nations. This latter finding together with the lack of resources to deal with psychiatric problems in poorer countries, emphasizes the need for brief, simple and inexpensive means of screening for psychiatric morbidity in the puerperium.

Once a scale is translated into a language different from the original, it is necessary to carry out validity studies to establish the optimal threshold for that newly translated instrument used in a particular sociocultural setting. Although it was not the purpose of this study to assess the reliability for this scale, the internal consistency as measured by the Cronbach $\alpha$ was reasonably good. The lowest total-item correlation for item 10 ("The thought of harming myself has occurred to me") might be explained by the content of this item, assessing a symptom indicative of great severity. It is noteworthy that the optimum threshold score found in our study involving middle-class women (9/10) was the same as the cut-off point found in a previous study with Chilean working-class women\textsuperscript{6}. Thus, the cut-off point for case definition with the EPDS was found to be the same for women from different socioeconomic backgrounds in Chile.

The validity coefficients found in our study are fairly good and similar to the corresponding values found by Murray and Carothers\textsuperscript{22} using the same diagnostic criteria and threshold score in their English validation study.

It is important to consider some methodological limitations in the present study. The sample and the number of depressed women were small, all interviews were conducted by the same person and our sample only included middle-class women. However, interviewing middle-class people is rather difficult in this country and, therefore, it was not possible to increase the sample size within the budget available for this study. On the other hand, the interviewer had extensive training with the instruments used and as he was the only rater this reduced a possible inter-rater variability.

In conclusion, the EPDS appears to be a useful and valid instrument to screen for postpartum depression in Chilean women. Its widespread use could contribute to the detection of those women who would benefit from help; thus diminishing their suffering and the consequences of this disorder upon themselves and their families.

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REFERENCES

APPENDIX

Edinburgh Postnatal Depression Scale7

As you have recently had a baby, we would like to know how you are feeling. Please UNDERLINE the answer which comes closest to how you have felt IN THE PAST 7 DAYS, not just how you feel today.

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 unnecessarily when things went wrong
   - yes, most of the time
   - yes, some of the time
   - not very often
   - never

4. I have been anxious or worried for no good reason
   - no, 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 had difficulty sleeping
   - yes, most of the time
   - yes, sometimes
   - not very often
   - no, not at all

8. I have felt sad or miserable
   - yes, most of the time
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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 occurred to me
yes, quite often
sometimes
hardly ever
never

Response categories are scored 0, 1, 2 and 3 according to increased severity of the symptom. Items marked with an asterisk are reverse scored (i.e. 3, 2, 1 and 0). The total score is calculated by adding together the scores for each of the ten items.

Escala de Edinburgo (Spanish version)

Como usted hace poco tuvo un bebé, nos gustaría saber como se ha estado sintiendo. Por favor SUBRAYE la respuesta que más se acerca a como se ha sentido en los últimos 7 días.

En los últimos 7 días:

(1) He sido capaz de reírme y ver el lado divertido de las cosas
tanto como siempre
no tanto ahora
mucho menos ahora
no, nada

(2) He disfrutado mirar hacia adelante
tanto como siempre
menos que antes
mucho menos que antes
casi nada

(3) Cuando las cosas han salido mal me he culpado a mi misma innecesariamente
sí, la mayor parte del tiempo
sí, a veces
no con mucha frecuencia
no, nunca

(4) He estado nerviosa o inquieta sin tener motivo
no, nunca
casi nunca
sí, a veces
sí, con mucha frecuencia

(5) He sentido miedo o he estado asustadiza sin tener motivo
sí, bastante
sí, a veces
no, no mucho
no, nunca

(6) Las cosas me han estado abrumando
sí, la mayor parte del tiempo no he podido hacer las cosas en absoluto
sí, a veces no he podido hacer las cosas tan bien como siempre
no, la mayor parte del tiempo he hecho las cosas bastante bien
no, he estado haciendo las cosas tan bien como siempre

(7) Me he sentido tan desdichada que he tenido dificultades para dormir
sí, la mayor parte del tiempo
sí, a veces
no con mucha frecuencia
no, nunca

(8) Me he sentido triste o desgraciada
sí, la mayor parte del tiempo
sí, bastante a menudo
no con mucha frecuencia
no, nunca

(9) Me he sentido tan desdichada que he estado llorando
sí, la mayor parte del tiempo
sí, bastante a menudo
sólo ocasionalmente
no, nunca

(10) Se me ha ocurrido la idea de hacerme daño
sí, bastante a menudo
a veces
casi nunca
no, nunca