SCREENING FOR POSTNATAL DEPRESSION IN THE DEVELOPING WORLD: A COMPARISON OF THE WHO SELF-REPORTING QUESTIONNAIRE (SRQ-20) AND THE EDINBURGH POSTNATAL DEPRESSION SCREEN (EPDS)

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ABSTRACT

Objective: This study was conducted to compare the suitability, usefulness, and validity of the Self Reporting Questionnaire (SRQ-20) and the Edinburgh Postnatal Depression Scale (EPDS) for screening postnatal depression in a mostly non-literate, rural, postnatal population of Pakistani women.

Design: Comparative Study.

Place and Duration of Study: Ten union councils of Southern Kahuta, a rural sub-district of Rawalpindi, Pakistan during January to September 2002 (a total of nine months).

Subjects and Methods: Translation and cultural adaptation of all instruments was carried out using a rigorous seven-step procedure. A total of 541 women were administered the SRQ-20 and EPDS by trained health workers, and later interviewed with WHO Schedules for Clinical Assessment in Neuropsychiatry (SCAN). Receiver Operating Curve (ROC) analysis was undertaken.

Results: ROC curves for the SRQ show values for the ROC area under the curve of 0.82 (95% CI: 0.78 to 0.86). The corresponding values for EPDS are 0.84 (95% CI: 0.81 to 0.88). The effects of varying cut-off points on the sensitivity, specificity, and positive predictive value are described.

Conclusion: This study shows that when used by trained health workers after cultural adaptation, the SRQ-20 is equally effective as EPDS in screening for postnatal depression. The health workers preferred to use the SRQ-20 with non-literate women because of its simpler format.

Key words: SRQ-20, EPDS, ROC, Psychiatric screening, Postnatal depression, Postpartum depression, Validation, Mental health, Mothers, Developing countries, Pakistan

INTRODUCTION

Recent epidemiological studies have reported high rates of postnatal depression (PND) in developing countries[1-3], at least 15% to 35% of mothers experiencing a marked depressive illness in the months following childbirth. Postnatal depression is disabling not only for the mother, but also has long-term psychological[4] and physical[5,6] health consequences for the infant. More than 50% of cases of post-natal depression become chronic[2] and the long-term consequences are severest in these cases. Postnatal depression therefore has important public health ramifications.

Early detection of symptoms and prompt intervention can greatly reduce adverse consequences[7]. The association between PND and poor health of infants in developing countries implies that early recognition of PND may also identify a group whose children are at higher risk of ill health, and potentially be a specific target for support and advice on infant care.

Most of the self-report instruments for psychiatric screening are designed for use by literate persons. Women who cannot read or write comprise more than 25% of population of all developing countries and over 50% of population in South Asia[8]. Literacy rates are lower still in rural areas. For example, female literacy rates in rural Pakistan and India are 21% and 34% respectively. There is therefore a need for an instrument that can be administered verbally by primary health workers working with largely non-literate women, especially in rural areas. The SRQ-20[9] was developed specifically for use in primary care by health workers in developing countries, and can be verbally administered to non-literate persons. The SRQ has 20 items, each item having a 'yes' or 'no'

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response to questions about psychological and somatic symptoms in the past 30 days. The maximum score is 20. It has been in use in developing countries for about 20 years. However, it has not been validated specifically in postnatal population.

The EPDS is the most commonly used screening instrument for PND in UK and many other countries[10]. It is a self-reporting instrument, employing a multiple-choice format; respondents have to choose one response out of four that best describes their mood state in the past 7 days. The maximum score is 30. It has not been tested as a verbally administered questionnaire. Therefore, its usefulness in a non-literate sample in a developing country remains uncertain.

This study aims to investigate the accuracy, suitability and psychometric properties of these two instruments in a mostly non-literate rural post-natal population and to suggest guidelines for use.

SUBJECTS AND METHODS

The study was conducted in a rural sub-district of Rawalpindi, Pakistan. The sample consisted of all healthy women from 10 union councils of Southern Kahuta, who had given birth from September to December 2001. The women were included if they fulfilled the following criteria: age 17-40 years; not suffering from a physical illness, psychotic disorder or learning disability; and baby physically healthy at time of interview. Five hundred and seventy women fulfilled the criteria, 541 (95%) agreeing to take part in the study. After obtaining informed consent, they were interviewed at their homes 10-12 weeks after giving birth. Although about 25% women could read the questionnaire, it was verbally administered to all the subjects.

Translation and cultural adaptation of questionnaires

The validity of instruments developed in a different language and culture has been questioned[11]. Therefore, all questionnaires were translated and adapted into Urdu, using a seven-step procedure developed for accurate and culturally valid translations into the local language[12]. These steps include translation and back-translation by a panel of experts, key-informant interviews with the target population, and structured focus group discussions with mothers, to obtain better cultural understanding of difficult concepts.

Data ascertainment

Primary health care workers (Lady Health Workers, LHW) were trained to use the adapted version of the questionnaires until they achieved overall 90% agreement for items in both questionnaires. Each mother was administered the SRQ and EPDS by the same LHW on the same day to ensure that day-to-day variation of mood state did not effect the scores. She read out the instructions and questions to the respondents, waiting for the response to each question, before moving on to the next question. She was not allowed to prompt the respondent or change the structure of the questions in any way. The worker noted the time taken to administer the two questionnaires, and rated the two instruments on an index of 'ease of use'. Later in the day, the mother was interviewed by one of two experienced and trained mental health professionals (AR and ZI) using the Schedule for Assessment in Neuropsychiatry (SCAN) [13], a semi-structured interview schedule. The SCAN was translated and adapted using the same procedure as for the screening instruments. ICD-10 diagnoses of Depressive disorder[14] were assigned to all subjects fulfilling the criteria for a current episode. The interviewers were blind to the SRQ or EPDS scores.

The data were analyzed using the STATA 7 statistical package[15]. Receiver Operating Characteristic (ROC) analysis was done to assess the global performance of the two instruments and to assess the effect of varying the cut off point on the sensitivity, specificity and positive predictive value.

The Research Ethics Committees of University of Manchester and Rawalpindi Medical College approved the study.

RESULTS

ROC curves for the SRQ show values for the ROC area under the curve of 0.82 (95% CI: 0.78 to 0.86). The corresponding values for EPDS are 0.84 (95% CI: 0.81 to 0.88). The values can range from 0.5 (ability to discriminate case from non-case no better than chance to 1.0 (perfect discrimination).

Tables 1 and 2 give a range of SRQ and EPDS thresholds, along with the corresponding values of the sensitivity (i.e., the proportion of depressed women correctly identified), and specificity (i.e., the proportion of non-depressed women correctly identified) as well as the positive predictive value of the scales (i.e., the proportion of women identified as depressed who are truly depressed).

Table 1

Validity coefficients for the SRQ (all values expressed as percentages)

Cut-off point	Sensitivity	Specificity	Positive predictive value
4/5	95.2	20.6	31.5
5/6	90.5	36.2	35.2
6/7	85.7	52.9	41.0
7/8	81.0	65.1	47.0
8/9	77.5	74.7	54.0
9/10	72.8	80.2	58.5
10/11	67.4	86.5	65.5
11/12	61.9	91.4	73.4
12/13	55.8	93.2	75.9
13/14	48.3	94.5	77.2
14/15	39.5	96.6	81.7
15/16	30.6	98.2	86.5
16/17	21.1	99.2	91.2

Table 2

Validity coefficients for the EPDS
(all values expressed as percentages)

Cut-off point	Sensitivity	Specificity	Positive predictive value
6/7	92.1	49.2	41.2
7/8	88.7	59.7	46.1
8/9	84.8	67.7	50.4
9/10	81.5	73.1	52.6
10/11	76.9	77.4	55.3
11/12	70.9	80.5	56.7
12/13	65.6	84.4	59.9
13/14	60.3	88.5	64.5
14/15	53.6	92.0	69.3
15/16	46.4	95.6	76.4
16/17	41.1	96.7	78.0

Table 1, for example, shows that at cut-off point of 7/8, the SRQ correctly identifies 81% mothers with depression in the community (as diagnosed with SCAN), and, within the sample that it identifies, 47% mothers are depressed. In comparison, the EPDS, at a cut-off point of 9/10, identifies about 82% of mothers with depression, and within that sample, 50.4% are depressed.

The mean time taken to administer the SRQ is 5.6 minutes (SD 2.8, range 3 to 11) while the EPDS takes on average 11.5 minutes to administer (SD 3.5, range 5 to 16). On a seven point Likert scale of 'ease of use' ranging from 1 (extremely easy) to 7 (extremely difficult), the mean score for SRQ is 2.8 (SD 1.1, range 1 to 5). In comparison, this score for the EPDS is 4 (SD 1.2, range 2 to 6). All health workers stated they would prefer to use the SRQ with non-literate women because the 'Yes/No' response format was much easier to use than the multiple choice format of the EPDS. The total number of LHWs surveyed was twenty.

DISCUSSION

This study shows that when used by trained health workers after proper cultural adaptation, both SRQ and EPDS are effective screening instruments for postnatal depression in non-literate women, with EPDS having slightly better positive predictive value. However, the EPDS is more difficult to use with non-literate women due to its format, and takes longer to administer.

Citing various primary care and community studies carried out in developing countries, WHO found 7/8 to be the most commonly used cut-off point in non postnatal populations, sensitivity ranging from 81% to 95% and specificity 58% to 95%[9]. In a recent community study, Saeed et al. [16] found 7/8 to be the best SRQ-20 threshold for non postnatal women in rural Rawalpindi, with a sensitivity of 78% and specificity of 70%. This compares with a sensitivity of 81%, specificity of 65.1% and PPV of 47% in the current study. The higher number of false positives in our study could mean that women in the postnatal period experience more somatic symptoms such as poor sleep and tiredness, without being clinically depressed. The SRQ contains many such somatic items. For routine screening, it might be more prudent to use a higher cut-off point, such as 9/10, where the sensitivity decreases to 73%, but the PPV is almost 60%. However, in epidemiological studies it may be preferable to include more false positives rather than excluding false negatives. A lower cut-off may therefore be desirable.

This study also confirms the usefulness of the EPDS for screening postnatal depression in a rural community in a developing country. It has already been used in a number of studies on postnatal women in other cultures[10, 17, 18] with 10/11 the most commonly used cut-off point. However, in our population, a lower cut-off point of 8/9 has the best sensitivity of about 85% and a PPV of 50% that is not too different compared to the cut-off 10/11.

While both instruments are effective in identifying more than three-quarters of women with postnatal depression, they produce samples in which only about half the women are depressed as shown by SCAN interview. This could mean that the screening instruments capture many women who are showing symptoms of social distress and are not actually clinically depressed. This might be expected in a socio-economically deprived area such as the study area in rural Rawalpindi. Therefore, in such areas, epidemiological studies that rely solely on questionnaires or structured lay- interviews may show much higher rates of morbidity than is actually the case.

The study highlights the importance of proper translation and cultural adaptation of questionnaires into the local dialect before use. An earlier Urdu version of the SRQ-20 was validated with Present State Examination (PSE-10) in the same study area[19], and its performance criticized for not being culture specific. However, an Urdu, rather than Punjabi version of the SRQ was used in that study. Although Urdu is spoken and understood by the rural populace, certain psychological states are expressed in different ways and specific SRQ items can only be understood and related to if the nuances and subtleties of local dialect and local cultural expressions are used.

Previous studies in developing countries have been conducted on women attending ante-natal or postnatal facilities. In many rural areas of developing countries, women do not attend postnatal health facilities. In our sample, 61% women delivered at home with no follow-up, and would have been missed if recruitment had been health-facility based. Therefore, our data, derived from a large representative community population, are more likely to be an accurate estimate of how the instruments perform when used by primary care workers in the general population.

Finally, the issue of user-friendliness is important if routine screening by health workers is required. On verbal ad-

ministration, the SRQ is easier to use and takes less time, while EPDS is more robust but relatively difficult to use due to its format. Future developers of screening instruments should take into consideration the needs of subjects who cannot read or write. Pictorial cue cards or other visual aids such as visual rating scales could be included for such subjects.

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