Validation of the Sinhala translation of Edinburgh Postnatal Depression Scale

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(Index words: Antenatal and postnatal depression, criterion validity, reliability)

Abstract

Introduction  To determine the validity and reliability of the Sinhalese translation of the Edinburgh Postnatal Depression Scale (EPDS) as a screening instrument to detect antenatal and postnatal depression.

Method  Two hundred and sixty five antenatal women and 204 postnatal women attending the field polyclinics of the Medical Officer of Health (MOH) area Kolonnawa participated in the study. Psychiatric diagnosis based on ICD 10 Classification of Mental and Behavioural Disorders was the 'gold standard' and the receiver operating characteristic (ROC) analysis was used to evaluate the test performance of the translated EPDS for antenatal and postnatal depression separately. Reliability was tested using test-retest method and computing intra-class correlation coefficients.

Results  A cut-off score of 9 was selected as the best to screen for depression, in antenatal (sensitivity 90.7% and specificity 86.8%) and postnatal women (sensitivity 89.9% and specificity 78.9%). The intra-class correlation coefficients of the instrument for antenatal and postnatal women were 0.95 (95% CI = 0.82 - 0.99) and 0.96 (95% CI = 0.86 - 0.99).

Conclusion  The Sinhalese translation of the EPDS is a valid and a reliable instrument to screen for depression in antenatal and postnatal women in Sri Lanka.

Introduction

In many South Asian countries, antenatal and postnatal depression are reaching epidemic proportions [1, 2] warranting community level public health action such as screening, early detection and treatment.

The EPDS was developed [3] to identify women experiencing postnatal depression. Since then the effectiveness of EPDS as an instrument to measure antenatal depression also has been confirmed [4]. The EPDS has been translated from the original English version [3] to south east Asian languages validated, and used successfully [1, 2]. Such studies have shown variability in sensitivity, specificity and the optimal cut-off scores for prenatal and postnatal depression [1, 4]. Validation of the EPDS in a given population is essential before it can be used as a screening instrument.

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Correspondence: DR, e-mail <edrowel@sltnet.lk> and <Dhammica.Rowel@nuigalway.ie>. Received 22 June, and revised version accepted 11 November 2007. Conflicts of interest: none declared.
Results

Criterion validity of EPDS for antenatal women

The EPDS scores for antenatal women diagnosed as depressed by the Psychiatrist ranged from 5-23 (median = 13.0). Women diagnosed as having a normal mood had scores ranging from 0-17 (median = 5.0). The area under the ROC curve for antenatal women (figure 1) was 0.96 (95% CI = 0.93-0.99; SE = 0.01). A score of '9' which gave a sensitivity of 90.7% (95% CI = 76.2%-96.4%) and a specificity of 86.8% (95% CI = 80.9%-90.9%) was selected as the best cut off to screen for depression in antenatal women. This gave a false positive rate of 12.2% (95% CI = 8.3%-17.1%) and a false negative rate of 8.2% (95% CI = 2.7%-18.5%). The Youden's index was 0.8 (95% CI = 0.7-0.9). The likelihood ratios for positive and negative tests were 7.6 (95% CI = 5.2-10.9) and 0.1 (95% CI = 0.04-0.24).

Criterion validity of EPDS for postnatal women

The EPDS scores for the postnatal women who were diagnosed as depressed by the Psychiatrist ranged from 5-22 (median = 13). Women diagnosed as having a normal mood had scores ranging from 0-17 (median = 5). The area under the ROC curve for postnatal women (figure 2) was 0.94 (95% CI = 0.91-0.98; SE = 0.02). A score of 9 which gave a sensitivity of 89.9% (95% CI = 74%-96.1%) and a specificity of 78.9% (95% CI = 70.6%-84.9%) was selected as the best cut-off to screen for depression in postnatal women. This gave a false positive rate of 19.4% (95% CI = 13.7%-26.1%) and a false negative rate of 8.2% (95% CI = 2.7%-18.5%). The Youden's index was 0.7 (95% CI = 0.6-0.8). The likelihood ratios for positive and negative tests were 4.7 (95% CI = 3.4-6.6) and 0.1 (0.04-0.26) respectively.

In measuring the reliability of the EPDS, the intra-class correlation coefficient for antenatal and postnatal women were 0.95 (95% CI = 0.82-0.99) and 0.96 (95% CI = 0.86-0.99) respectively, which demonstrated values closer to '1'.

Discussion

Translation and validation of an instrument is an important procedure that appraises the reliability and validity of the instrument when a version other than the original is used.

Semantic equivalence has been particularly difficult to achieve in cross-cultural research. The essence of semantic equivalence is that the meaning of each item remains the same after translation into the language of each culture. The idioms used in a given culture, which may not impart the same meaning in another language, may seriously affect the respondent's view of the question posed and result in inaccurate responses [8]. This problem was detected and overcome by using suitable semantics.

Different indices of reliability may be used depending on the purpose of the measurement. For a predictive measure it is the intra-class correlation coefficient that is appropriate [9]. The intraclass correlation coefficient of 0.95 in antenatal women and 0.96 in postnatal women is considered highly reliable [10].

The best way of appraising validity is to find a criterion (a 'gold standard') that is known or believed to be close to the truth and to compare the results of the measure with this criterion. The validity of a screening test is measured by its ability to correctly categorise persons who have disease as test positive (sensitivity) and those...
without disease as test negative (specificity). The primary objective of a screening test is to detect disease early and reduce morbidity. In this specific instance of detecting depression, higher sensitivity as opposed to specificity was considered more appropriate to keep false negative rate at a minimal level.

A ROC plot is obtained by calculating the sensitivity and specificity of every observed data value and plotting sensitivity against 1-specificity as in figures 1 and 2. The accuracy of a test depends on how well the test separates the group being tested into those with and without the disease and is measured by the area under the ROC curve. ROC curves plotted for both antenatal and postnatal women in this instance had an area under the curve close to 1 indicating that the Sinhalese translation of the EPDS has a high discriminatory power [11].

In the original validation study of EPDS [3] for postnatal depression, with a threshold score of 12/13, all women with major depression and two with probable major depression were correctly identified. That instrument had a sensitivity of 86% and specificity of 78%. A similar cut-off point was found to detect major depression in Asian countries [1]. Cox and Holden [12] have recommended lowering the cut-off to 9/10 in order to increase the detection rate if the EPDS is used in the first stage of screening in a community study. It was possible to achieve the same recommended cut-off score for the present study, which it is intended to be used as a community screening instrument.

**Conclusion**

The Sinhalese translation of the EPDS is a valid and a reliable instrument to screen for depression in antenatal and postnatal Sinhala women in Sri Lanka. The best cut-off score for the EPDS to screen for antenatal and postnatal depression is 9.

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**References**

Effect of repeated mass chemotherapy for filariasis control on soil-transmitted helminth infections in Sri Lanka

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(Index words: Anthelmintics, lymphatic filariasis, ascariasis, trichuriasis, hookworm infection)

Abstract

Background In July 2006 Sri Lanka completed 5 rounds of annual mass drug administration (MDA) with diethylcarbamazine citrate (DEC) and albendazole as part of its national programme for elimination of lymphatic filariasis (LF). Albendazole is highly effective against soil-transmitted helminths (STH). This study was carried out to assess the effect of repeated annual MDA on STH infections in the Western Province of Sri Lanka, an area co-endemic for LF and STH.

Methods Faecal samples were obtained (during August - September 2006), from grade 5 students in 17 schools in the Western Province that were included in a national survey of schoolchildren's health in 2003, and examined using the modified Kato-Katz technique. The prevalence and intensity of roundworm, whipworm and hookworm infections in 2003 and 2006 were compared.

Results Faecal samples from 255 children were examined in 2003; 448 were examined in 2006. Roundworm prevalence was marginally lower in 2006 (4.0%) than in 2003 (4.7%), as was hookworm (0.2% vs 0.4%), whereas whipworm prevalence was higher (13.8% vs 9.4%). These differences as well as that between the geometric mean egg counts were not statistically significant. Compliance with MDA in 2006, as reported by the schoolchildren examined, was only 59%.

Conclusions Four annual rounds of MDA with DEC and albendazole had virtually no effect on STH infections in the study area.

Introduction

The WHO Global Programme to Eliminate Lymphatic Filariasis aims to interrupt transmission of *Wuchereria bancrofti* with MDA programmes using a combination of a microfilaricide (DEC or ivermectin) and albendazole. It was expected that such programmes, in addition to eliminating LF, would also significantly reduce STH infections because of the inclusion of albendazole [1].

Mass or targeted chemotherapy with any one of 4 anthelmintics (including albendazole) is recommended by WHO for use in communities where the cumulative STH prevalence (infection with one or more STH) is over 50% or the cumulative percentage of moderately or heavily infected individuals is more than 10% [2]. In endemic communities where infection rates are lower (such as in Sri Lanka at present), extensive use of other control strategies is recommended, but there is little published data on the effect of mass chemotherapy in such settings.

Sri Lanka's MDA programme for elimination of LF started using an annual, two-drug regimen in the Western (WP), North-Western and Southern Provinces in 2002. A recent national survey of the health status of primary schoolchildren included examination for STH infections. The survey was carried out in the WP during May-June 2003, just before the second round of the MDA programme [3]. The specific objectives of this study were to establish the prevalence and intensity of STH infections among primary schoolchildren in the WP in 2006, after completion of 5 rounds of MDA with DEC and albendazole, and to compare the prevalence and intensity of STH infection in 2006 with that found in 2003.