Journal of Affective Disorders 150 (2013) 1041–1047

Contents lists available at ScienceDirect

Journal of Affective Disorders

journal homepage: www.elsevier.com/locate/jad

Research report

Validation of screening tools for antenatal depression in Malawi—A comparison of the Edinburgh Postnatal Depression Scale and Self Reporting Questionnaire

Robert C Stewart [a,b,*], Eric Umar [c], Barbara Tomenson [d], Francis Creed [a]

[a] Institute of Brain, Behaviour and Mental Health, University of Manchester, UK
[b] Department of Mental Health, College of Medicine, University of Malawi, Malawi
[c] Department of Community Health, College of Medicine, University of Malawi, Malawi
[d] Biostatistics Unit, Institute of Population Health, University of Manchester, UK

ARTICLE INFO

Article history:
Received 19 March 2013
Received in revised form
15 May 2013
Accepted 19 May 2013
Available online 14 June 2013

Keywords:
Depression
Antenatal
Screening tools
Validation
Low-income countries

ABSTRACT

Background: The detection of antenatal depression in resource-limited settings such as Malawi, Africa, is important and requires an accurate and practical screening tool. It is not known which questionnaire would be most suitable for this purpose.

Method: A rigorously translated and modified Chichewa version of the Edinburgh Postnatal Depression Scale (EPDS) was developed. The Chichewa EPDS and an existing Chichewa version of the Self Reporting Questionnaire (SRQ) were validated in women attending an antenatal clinic in rural Malawi, using DSM-IV major and major-or-minor depressive episode as the gold standard diagnoses, determined with Structured Clinical Interview for DSM-IV (SCID). Weighted test characteristics for each possible cut-off were calculated and Receiver Operator Characteristic (ROC) curves derived.

Results: The participants were 224 pregnant women, 92 of whom were interviewed using the SCID. The area under the ROC curve (AUC) for detection of current major depressive disorder for the EPDS was 0.811 (95% CI 0.734-0.889) and for the SRQ was 0.833 (95% CI 0.770-0.897). AUC for major-or-minor depressive disorder for the EPDS was 0.767 (95% CI 0.695-0.839) and for the SRQ was 0.883 (95% CI 0.839-0.927). These were not significant differences. Internal consistency was high for both the SRQ (Cronbach's alpha 0.825) and the EPDS (Cronbach's alpha 0.904).

Limitations: Inter-rater reliability testing was not done. The relatively small sample size resulted in wide confidence intervals around AUCs. The study was conducted amongst antenatal clinic attenders only, limiting generalisability to all pregnant women in this setting.

Conclusion: The Chichewa versions of the EPDS and SRQ both show utility as brief screening measures for detection of antenatal depression in rural Malawi.

1. Introduction

Maternal depression, anxiety and psychological distress during pregnancy and the puerperal period are common in low and middle income countries (LMIC) (Fisher et al., 2012). Mean weighted prevalence estimates of antenatal and postnatal depression in sub-Saharan Africa are 11.3% and 18.3% respectively; perinatal anxiety is also common (Sawyer et al., 2010). Until recently, attention has focused on postnatal depression but the importance of depression antenatally is increasingly recognised. Antenatal depression is a risk factor for postnatal depression (Robertson et al., 2004). In studies from LMIC, antenatal depression/distress has been associated with maternal disability (Bindt et al., 2012) and, in longitudinal studies, has been shown to be a risk factor for low birth weight (Patel et al., 2002), prolonged labour (Hanlon et al., 2009), delay in initiating breastfeeding (Hanlon et al., 2009), and early cessation of exclusive breastfeeding (Patel and Prince, 2006). Depression persisting from pregnancy into the postnatal period has been associated with increased risk of infant diarrhoea in Ethiopia (Ross et al., 2011) and greater infant growth impairment in Pakistan (Rahman et al., 2004).

The World Health Organisation's Mental Health Gap Action Project (mhGAP) calls for mental health to be integrated into primary health care in LMIC (WHO, 2008). The detection of depression in primary care by non-specialist health workers may

* Corresponding author at: Institute of Brain, Behaviour and Mental Health, University of Manchester, UK. Tel.: +44 161 306 0203.
E-mail address: robcstewart@mac.com (R. Stewart).

0165-0327/$ - see front matter © 2013 Elsevier B.V. All rights reserved.
http://dx.doi.org/10.1016/j.jad.2013.05.036

be aided by the use of brief and valid depression screening measures. Such measures need to have been validated after careful consideration of the impact that culture and language may have upon the validity of the measure. This requires a careful process of translation, back-translation and modification to ensure cross-cultural equivalence (Rahman et al., 2003). Screening measures validated for use in the postnatal period in sub-Saharan Africa include the Self Reporting Questionnaire (SRQ) (Hanlon et al., 2008; Weobong et al., 2009; Stewart et al., 2009), Edinburgh Postnatal Depression Scale (EPDS) (Chibanda et al., 2010; Uwakwe and Okonkwo, 2003; Tesfaye et al., 2010; Bass et al., 2008; Weobong et al., 2009), Zung Self Rating Depression Scale (Uwakwe and Okonkwo, 2003), Kessler Scales (K10 and K6) (Tesfaye et al., 2010; Baggaley et al., 2007), and the Patient Health Questionnaire (PHQ-9) (Tesfaye et al., 2010; Weobong et al., 2009). Scales validated in the antenatal period are the SRQ (Hanlon et al., 2008), EPDS (Adewuya et al., 2006) and Hopkins Symptom Checklist 25 (HSCL-25) (Kaaya et al., 2002).

Prior to this study, no depression screening tools had been validated for use in an antenatal population in Malawi. The purpose of this study was to compare the performance of the SRQ and EPDS. Both instruments have been validated in other sub-Saharan African countries, but have key differences that may affect their usefulness in rural Malawi.

The SRQ was designed by the World Health Organisation as a screen for common mental disorders (WHO, 1994). It includes items enquiring about depression, anxiety and non-specific somatic complaints. The SRQ has been used in a number of studies of antenatal psychological wellbeing in South Asia and Africa (Husain et al., 2011; Medhin et al., 2010; Rahman and Creed, 2007; Ola et al., 2011). To date, there has been only one validation of the SRQ in an antenatal population in sub-Saharan Africa (Hanlon et al., 2008). In a previous study of mothers attending a paediatric clinic in rural Malawi, we showed that the SRQ, modified and translated into Chichewa (the most commonly spoken language in Malawi), was useful as a brief screening measure for depressive disorder (Stewart et al., 2009).

Unlike the SRQ, the EPDS was specifically designed for the postnatal period and excludes somatic items that might cause difficulty since somatic symptoms occur as part of the normal puerperium (Cox et al., 1987). It has been successfully validated in pregnancy when physical symptoms are also common (Gibson et al., 2009). However, it has been suggested that, particularly in LMIC, somatic symptoms are important presenting symptoms of psychological distress/depression and should not be excluded from screening measures (WHO, 1994). Also, the EPDS might be less applicable than the SRQ in predominantly illiterate populations as it requires respondents to choose between 4 options for each question rather than two (yes/no). There have been conflicting reports of the validity of the EPDS amongst women in the postnatal period in Ethiopia and Ghana; Hanlon et al (2008) found that the EPDS had poor test characteristics in rural Ethiopia, but it performed adequately in an urban setting in Ethiopia (Tesfaye et al., 2010) and a rural setting in Ghana (Weobong et al., 2009). As of March 2013, there has been no published validation of the EPDS in a low-literacy predominantly rural antenatal population in sub-Saharan Africa. Previous studies have been in postnatal groups (Hanlon et al., 2008; Tesfaye et al., 2010; Weobong et al., 2009) or in a high literacy urban antenatal population (Adewuya et al., 2006).

The first aim of this study was to translate and adapt the EPDS into Chichewa. The second was to validate the Chichewa versions of EPDS and SRQ in a predominantly rural population of pregnant women using DSM-IV major and major-or-minor depression as the gold-standard criteria. The third aim was to compare the ease of administration and test characteristics of the EPDS and SRQ.

2. Method

2.1. Translation and modification of the EPDS

The EPDS was specifically designed for use during the postnatal period but has been validated in both antenatal and postnatal populations (Cox et al., 1987; Gibson et al., 2009). It was designed as a self completed questionnaire but has also been used administered by interviewer. The EPDS consists of 10 questions that focus on the psychological symptoms of depression occurring in the past week; it does not include items on sleep, appetite, energy or other bodily complaints. Each item is answered from a choice of 4 options.

The process of translation and modification of the EPDS in Chichewa followed the method used in the development of the SRQ in Chichewa previously described (Stewart et al., 2009). A forward translation of the EPDS was made by Malawian clinical psychologist (EU) and was discussed with a UK psychiatrist (RS) and 2 Malawian social science graduates. RS advised on the concepts captured by the original English wording of each item to guide the choice of Chichewa expression. The draft consensus translation was then back-translated into English by a bilingual independent non-mental health professional. Further modifications were made on the basis of the back-translation. Discussion was held with nurses from the antenatal clinic who were invited to comment upon the EPDS translation. Further modification was made to the translation based on these comments. The EPDS was administered to a number of women attending the antenatal clinic. The interviewers noted any items about which the subjects asked for clarification and they discussed problematic items with the women in order to check understanding. Experience from the piloting was discussed and the final version was agreed.

A Chichewa version of the SRQ was validated in an earlier study (Stewart et al., 2009). The SRQ was designed by the World Health Organisation as a screen for common mental disorders that could be used internationally and particularly in developing countries (WHO, 1994). It consists of 20 questions with yes/no answers exploring symptoms of depression and anxiety. Items include somatic symptoms of depression (sleep, appetite, fatigue) and somatic complaints such as headache and non-specific gastro-intestinal symptoms.

2.2. Criterion validation of SRQ and EPDS against DSM-IV major and major-or-minor depressive episode

To evaluate criterion validity of the Chichewa EPDS and SRQ in an antenatal population, we validated the measures against diagnosis of current major depressive episode and major-or-minor depressive episode determined using the Structured Clinical Interview for DSM-IV (SCID) (First et al., 2002). This is a semi-structured interview that determines formal diagnosis according to the Diagnostic and Statistical Manual of Mental Disorders 4th edition classification. The depression component of SCID had been translated and used in the earlier validation of the Chichewa SRQ (Stewart et al., 2009). SCID interviews were conducted by a social science graduate-level interviewer with training and supervision by RS and EU.

The validation was conducted as part of a study of depression/distress amongst pregnant women attending antenatal services at the District Hospital in Mangochi, Malawi. Women were recruited to this study who spoke either of the 2 main languages of the area, Chichewa or Chiyao. Only those whose preferred language was Chichewa were included in this validation of the Chichewa SRQ and EPDS. A convenience sample of women attending for their second (or later) antenatal visit was recruited. All consenting women were administered the EPDS, the SRQ and a demographics