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Research report

The comparative validity of screening scales for postnatal common mental disorder in Kintampo, Ghana

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Abstract

Background: There have been few attempts formally to validate screening measures for postnatal common mental disorder in low income country settings. We have investigated the comparative validity of three different screening approaches in a community-based study in Kintampo, Ghana.
Method: 160 women aged 15–45 years, and 5–11 weeks postpartum were first screened using the Self-Report Questionnaire (SRQ-20), with oversampling of higher scorers. The other test assessments were the Edinburgh Postnatal Depression Scale (EPDS) and the Patient Health Questionnaire (PHQ-9). Criterion validity was measured against the Comprehensive Psychopathological Rating Scale (CPRS), and concurrent validity against the WHO Disability Assessment Schedule. A sub-sample ($n=40$) was re-interviewed 2 weeks later for test–retest reliability.
Results: Internal consistency (Cronbach's Alpha) was equivalent across all three test scales; EPDS (0.79), SRQ-20 (0.78) and PHQ-9 (0.79). Test–retest reliability was better for PHQ-9 (ICC 0.75) than for the EPDS (0.51). For criterion validity the PHQ-9 (AUROC 0.90 (0.81–0.98)), was superior to the SRQ-20 (0.74 (0.62–0.86)) and the EPDS ((0.84 (0.76–0.92). Youden's Index was also superior for PHQ-9. Item analysis revealed that a mixture of somatic and cognitive symptoms best discriminated between cases and non-cases for all three scales.
Limitations: Inability to ascertain inter-rater reliability, order effects and possible loss of technical equivalence due to item modifications.
Conclusions: The evidence for the validity, reliability, and superiority of the PHQ-9 over other screening assessments has been extended. The PHQ-9 is short, easy to administer and acceptable to a largely illiterate population of Ghanaian women, 5 to 11 weeks post partum.

Keywords: Postpartum depression; Common mental disorder; Validity; Reliability; PHQ-9

1. Background

Postnatal common mental disorder (CMD) comprises a group of conditions including depression, anxiety and

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somatisation disorders. Postnatal depression has been most extensively studied; the average prevalence from studies carried out in economically developed countries was 13% (95% CI 12.3 to 13.4) (O'Hara and Swain, 1996). Its public health significance is clearly established, with serious long-term consequences for maternal mental health(Kumar and Robson, 1984) and the cognitive and social development of the infant (Murray and Cooper, 2003). Its relevance to health and development in low income countries is suggested by a series of recent studies from south Asia demonstrating independent prospective associations with infant stunting and retarded development (Patel et al., 2003; Rahman et al., 2004). However, postnatal depression is commonly comorbid with anxiety disorders and pure anxiety contributes significantly to postnatal psychiatric morbidity (Ferri et al., 2007; Miller et al., 2006; Navarro et al., 2008; Ross et al., 2003). Antenatal anxiety is also a strong independent risk factor for postnatal depression (Austin et al., 2007). There is therefore a need both for clinical practice and research, to broaden the scope of postnatal screening to include the full range of common mental disorders.

In this paper, we report data from a study to test the comparative utility of three case-finding tools to screen for postnatal CMD in Kintampo, Ghana. The Edinburgh Postnatal Depression Scale (EPDS) (Cox et al., 1987) is perhaps the most widely used screening measure for postnatal depression. The EPDS has been extensively validated in the west (Eberhard-Gran et al., 2001). It has also been validated successfully in Morocco (Agoub et al., 2005), Nigeria (Uwakwe and Okonkwo, 2003), South Africa (Lawrie et al., 1998), and Mongolia (Pollock et al., 2006), but performed poorly in Ethiopia (Hanlon et al., 2008a). We also tested two generic screening assessments, the depression screening module of the Patient Health Questionnaire (PHQ-9) (Kroenke et al., 2001), and The Self-Report Questionnaire (SRQ-20,(Beusenberg and Orley, 1994). The PHQ-9 has been validated as a self-administered screen for depression in general health care settings in the USA, Germany and Spain, with generally impressive results (Diez-Quevedo et al., 2001; Lowe et al., 2004; Spitzer et al., 1999), and among university students in Nigeria (Adewuya et al., 2006). To our knowledge, it has not previously been used or validated in women postnatally. The SRQ-20 was developed specifically by the World Health Organization for use in a wide range of cultural contexts as a screen for common mental disorders, particularly in developing countries with low prevailing levels of education and literacy. It has been validated in many of these settings (Beusenberg and Orley, 1994; Harpham et al., 2003) including in Mongolia (Pollock et al., 2006) and Ethiopia (Hanlon et al., 2008a) to detect postnatal common mental disorder. It has also been used to study postnatal CMD in Pakistan(Rahman and Creed, 2007), Nepal (Ho-Yen et al., 2006) and Dubai(Ghubash and bou-Saleh, 1997).

2. Methods

2.1. Setting and participants

The ObaapaVitA study is a cluster-randomised, double-blind, placebo-controlled trial investigating the impact of weekly vitamin A supplements on maternal mortality in rural Ghana. ObaapaVitA has established 4-weekly visits by field workers to all women aged 15 to 45 years living in six districts in the Brong Ahafo region of Ghana, with data collected on all pregnancies, births, deaths and migrations. Over 100,000 women are currently participating in the trial and around 14,000 births occur each year. Women were recruited for this validation study by identifying women in the ObaapaVitA database from one study district who were known to be between 5 and 11 weeks postpartum.

2.2. Interviewing procedures

After informed consent the SRQ-20 was administered by a trained field research worker (AI) as a screening assessment. All those scoring nine and above, half of those scoring between four and eight, and one quarter of those scoring three or below were selected at random for further test and gold standard assessment administration. The gold standard assessment was administered by a clinical psychologist (AB), and the test assessments by a psychology graduate research worker (WB). Both interviewers have had experience in conducting clinical assessments as part of research activities in KHRC and have also had training in the use of major clinical assessments scales such as the Schedules for Clinical Assessment in Neuropsychiatry (SCAN). We had planned to allocate the order of administration of test and criterion assessment interviews strictly at random but this proved logistically unsustainable. Nevertheless, the order of administration of the criterion and test assessments, was varied to limit order effects. In summary, all participants received the SRQ-20 first. Approximately one half then received CPRS followed by EPDS and PHQ-9, and one half EPDS and PHQ-9 followed by CPRS. Criterion interviews were carried out blind to results of test interviews and vice versa, and the pair of interview sets were performed on the same day. A sub-sample (n=40)