Journal of Affective Disorders 186 (2015) 32–39

Contents lists available at ScienceDirect

Journal of Affective Disorders

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

Validity of brief screening questionnaires to detect depression in primary care in Ethiopia

Charlotte Hanlon [a,b,*], Girmay Medhin [c], Medhin Selamu [a], Erica Breuer [d], Benyam Worku [a], Maji Hailemariam [a], Crick Lund [d], Martin Prince [b], Abebaw Fekadu [a,e]

[a] Addis Ababa University, College of Health Sciences, School of Medicine, Department of Psychiatry, Ethiopia
[b] King's College London, Institute of Psychiatry, Psychology and Neuroscience, Health Services and Population Research Department, Centre for Global Mental Health, UK
[c] Addis Ababa University, Aklilu-Lemma Institute of Pathobiology, Ethiopia
[d] Alan J Flisher Centre for Public Mental Health, Department of Psychiatry and Mental Health, University of Cape Town, South Africa
[e] King's College London, Centre for Affective Disorders, Department of Psychological Medicine, Institute of Psychiatry, Psychology and Neuroscience, UK

ARTICLE INFO

Article history:
Received 10 April 2015
Received in revised form
30 June 2015
Accepted 6 July 2015
Available online 21 July 2015

Keywords:
Depression
Validation
Primary health care
Sub-Saharan Africa
Developing country
Screening

ABSTRACT

Background: Brief depression screening questionnaires may increase detection of depression in primary care settings but there have been few validation studies carried out in typical populations in low-income countries.
Methods: Cultural validation of the Patient Health Questionnaire (PHQ-9/PHQ-2), the 20-item Self-Reporting Questionnaire (SRQ-20) and the Kessler scales (K6/K10) was carried out in 306 adults consecutively attending primary care facilities in small towns in Ethiopia. To assess criterion validity, the gold standard assessment for presence of Major Depressive Disorder (MDD) was made by Ethiopian psychiatric nurses using the Mini International Neuropsychiatric Interview.
Results: The prevalence of gold standard MDD was 5.9%, with irritability more common than depressed mood or anhedonia. The area under the receiver operating characteristic curve indicated good performance of the PHQ-9, SRQ-20, K6 and K10 (0.83–0.85) but only fair for the PHQ-2 (0.78). No cut-off score had acceptable sensitivity combined with adequate positive predictive value. All screening questionnaires were associated with disability and the PHQ-9 and SRQ-20 were associated with higher health service contacts, indicating convergent validity. Construct validity of all scales was indicated by unidimensionality on exploratory factor analysis.
Limitations: Test-retest reliability was not assessed.
Conclusions: Brief depression screening questionnaires were found to be valid in primary care in this low-income country. However, these questionnaires do not have immediate applicability in routine clinical settings. Further studies should evaluate utility of indicated screening embedded within health system changes that support MDD detection. Investigation of irritability as a core depression symptom is warranted.

1. Introduction

The treatment gap for depression in low- and middle-income countries (LMICs) is large; in the World Mental Health Survey in China and Nigeria, fewer than 10% of people with depression had received treatment in the year of illness onset (Wang et al., 2007). Undetected depression in rural low-income country community settings has been associated with substantial disability, premature mortality and increased attendance at health facilities with somatic complaints (Mogga et al., 2006a). Non-detection of depression in primary healthcare (PHC) settings is associated with cost and time burdens to both patient and health system due to repeated attendance, inappropriate prescribing of non-evidence-based interventions and poorer prognosis of co-morbid physical health conditions (Prince et al., 2007).

Effective treatments for depression that are appropriate and feasible for LMICs exist (Dua et al., 2011; Patel et al., 2007) but are not available to the majority of the population (World Health Organization, 2011). In order to reduce the treatment gap for depression, the World Health Organization's 'mental health gap action programme' (mhGAP) advocates integration of mental health

* Correspondence to: Department of Psychiatry, 6th Floor of the College of Health Sciences Building, Tikur Anbessa Hospital, Addis Ababa, PO 9086, Ethiopia.
E-mail address: charlotte.hanlon@kcl.ac.uk (C. Hanlon).

http://dx.doi.org/10.1016/j.jad.2015.07.015
0165-0327/

care into PHC services through task sharing, supported by new evidence-based treatment guidelines suitable for PHC workers (World Health Organization, 2008, 2010). Depression is a priority disorder for mhGAP; however, for successful implementation, increased community awareness and demand for care needs to be coupled with improved detection of depression within PHC.

In high-income countries, accurate detection of depression in PHC is more likely in the presence of a good therapeutic relationship, greater clinical experience, frequent patient contacts and when the patient presents with psychological, rather than somatic, symptoms of depression (Mitchell et al., 2009). This presents a great challenge in LMICs where the PHC system is often weak, with over-burdened clinics and high turnover of staff who have relatively limited training and clinical experience. In addition, somatic presentations of depression are the norm in this setting (Tylee and Gandhi, 2005).

Improving detection of depression by PHC workers is challenging (Goncalves et al., 2013). In high-income countries, standalone training is ineffective and the use of brief, screening questionnaires for depression are only effective in improving recognition, treatment and outcomes of depression if applied in conjunction with organisational changes, such as collaborative care (Gilbody et al., 2005, 2008). However, in low-income countries brief depression screening tools may have greater utility.

In this paper we present the cultural validation of brief questionnaires for detecting depression in PHC settings in Ethiopia. The objective was to examine the potential application of such questionnaires to the implementation and evaluation of mental health care integrated into primary care in Ethiopia as part of the Programme for Improving Mental health CarE (PRIME) (Lund et al., 2012).

2. Material and methods

2.1. Study design

A validation study to investigate the criterion, convergent and construct validity of brief depression screening questionnaires.

2.2. Setting

The study was carried out in health centres located in and around Butajira town, 130 km south of the capital city, Addis Ababa, Ethiopia. A psychiatric nurse-led unit is located in the Zonal hospital in Butajira town. However, at the time of the study there was no mental health care available in PHC. The PHC facility is staffed by health officers and nurses. This validation study was carried out in one urban, two semi-urban and one rural health centre, selected purposively.

2.3. Brief questionnaires to detect depression

(1) Self Reporting questionnaire, 20-item version (SRQ-20) (Beusenberg and Orley, 1994)
The SRQ-20 was developed to improve detection of common mental disorders in PHC settings in LMICs (Beusenberg et al., 1994). The SRQ items are single-clause questions which require a yes/no response and are easily administered in an interview format. The items include somatic, anxiety and depressive symptoms, as well as questions about suicidal ideation and functional impact, present in the preceding 30 days. The SRQ-20 has been widely validated and used in LMICs. In Ethiopia, the SRQ-20 has been validated for detection of depression in postnatal women (Hanlon et al., 2008a; Tesfaye, et al., 2010). A culturally adapted version of SRQ ('SRQ-F') lengthened the scale with little improvement in psychometric properties (Youngmann et al., 2008).

(2) Kessler 6 and 10 item versions (K6/ K10) (Furukawa et al., 2003)
The K10 and K6 scales are widely used tools to assess non-specific psychological distress in the previous one month. Each item is rated from 1 to 5, based on the persistence of a specific symptom, from "none at all" to "all the time". The K10 scale includes depressive, anxiety and somatic symptoms but not suicidal ideation. The Kessler 6-item scale comprises a sub-set of the Kessler 10-item scale (items 2, 3, 5, 7, 9 and 10). In Ethiopia, the criterion validity of K6 and K10 for detection of depression in postnatal women has been demonstrated (Tesfaye et al., 2010) but the Kessler has not been evaluated in a general PHC setting.

(3) Patient health questionnaire, 2- and 9-item versions PHQ-2 (Kroenke et al., 2003) and PHQ-9 (Kroenke and Spitzer, 2002)

The PHQ-9 is a widely used depression screening scale for PHC in high-income countries. The nine items of the PHQ follow the Diagnostic and Statistical Manual (DSM) version IV (American Psychiatric Association, 1994) diagnostic criteria for a depressive episode, including suicidal ideation, and ask about symptoms present in the preceding two weeks. The four response categories refer to the amount of time that the symptom was present (from 'not at all' (0) to 'nearly every day' (3)). A tenth item asks about the functional impact of the symptoms. Responses to the PHQ-9 can be summed to give a total symptom score. Alternatively, the DSM diagnostic algorithm for a major depressive episode can be applied to give a categorical diagnosis of depression. The PHQ-2 is comprised of the first two items of the PHQ-9 and has been found to be a useful screener in PHC settings in high-income countries (Kroenke et al., 2003). The criterion validity of the PHQ-9 for detecting depression has been demonstrated in medical out-patients at a referral hospital in Addis Ababa, Ethiopia (Gelaye et al., 2013).

2.4. Semantic, technical and content validation

Semantic, technical and content validity in the Ethiopia setting have already been established for the Amharic versions of the SRQ-20 (Hanlon et al., 2008a; Kortmann and ten Horn, 1988) and K10 (Tesfaye et al., 2010). The PHQ-9 was translated independently into Amharic by two Ethiopian psychiatrists and then back-translated into English. The final version was obtained by expert consensus. Moving from a self-completed to an interviewer-administered questionnaire necessitated modifications, in keeping with previous studies from low-income countries (Weobong et al., 2007). See Supplementary Files 1 and 2.

2.5. Criterion, construct and convergent validation study

2.5.1. Sample

Consecutive patients attending the four PHC facilities were recruited over a three week period in March 2013. Patients were approached after they had consulted the PHC worker. Patients were excluded if they required emergency medical attention, were unable to converse in Amharic (the official language of Ethiopia), were unable to communicate or were suffering from severe mental disorder.

2.5.2. Procedure

Participants were interviewed by (1) lay data collectors who administered the brief depression scales (SRQ-20, K10/K6 and PHQ-9/PHQ-2) and other structured questionnaires (see below), and (2) psychiatric nurses who carried out a gold standard clinical assessment to determine the presence or absence of MDD. To