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Research paper

Validation of screening tools for depression and anxiety disorders in a primary care population with high HIV prevalence in Zimbabwe

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ABSTRACT

Background: In low income countries in Sub-Saharan Africa there are few validated tools to screen for common disabling mental disorders such as depression and general anxiety disorder (GAD).
Objectives: We validated three screening tools: the Shona Symptom Questionnaire for common mental disorders (SSQ-14), the Patient Health Questionnaire for depression (PHQ-9), and the Generalized Anxiety Disorder questionnaire (GAD-7). The study participants were attendees at a primary health care clinic in Harare, Zimbabwe.
Methods: Consecutive adults aged 18 and above attending the clinic were enrolled over a two-week period in September 2013. Trained research assistants administered the screening tools to eligible participants after obtaining written consent. Participants were then interviewed by one of four psychiatrists using the Structured Clinical Interview of the DSM-IV (SCID). Performance characteristics were calculated for each tool, against the SCID as the gold standard.
Results: A total of 264 participants were enrolled, of whom 52 (20%) met the SCID criteria for depression alone, 97 (37%) for mixed depression and anxiety and 9 (3%) for anxiety alone. Of the 237 where HIV status was known, 165 (70%) were HIV positive. With the optimal cutoff of ≥ 9, the sensitivity and specificity for the SSQ-14 against a diagnosis of either depression and/or general anxiety were 84% (95% CI:78–89%) and 73% (95%CI:63–81%) respectively. Internal reliability was high (Cronbach $\alpha = 0.74$). The optimal cutoff for PHQ-9 was ≥ 11, which provided a sensitivity of 85% (95%CI:78-90%) and specificity of 69% (95%CI:59–77%) against a SCID diagnosis of depression (Cronbach $\alpha = 0.86$). The GAD-7 (optimal cutoff ≥ 10) had sensitivity and specificity of 89% (95%CI:81–94%) and 73% (95%CI:65–80%) respectively against a SCID diagnosis of GAD (Cronbach $\alpha = 0.87$).
Conclusion: Screening tools for depression and GAD had good performance characteristics in a primary health care population in Zimbabwe with a high prevalence of HIV. These can be used for research and also in clinical care to screen patients who may benefit from treatment

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1. Introduction

Common mental disorders (CMD) which consist of depression and anxiety disorders (Goldberg and Huxley, 1992; Todd et al., 1999) are a leading cause of disability globally (Steel et al., 2014). Almost three-quarters of people with CMD in low and middle income countries (LMIC) are estimated to be untreated (Lancet Global Mental Health Group et al., 2007). This is important because depression and anxiety are associated with consequences including lack of work productivity, loss of relationships and adverse impacts on development of offspring (Prince et al., 2007). Treating depression has been highlighted as a 'best-buy' condition globally (WHO, 2013). This has particular importance in settings with high HIV prevalence because detection and treatment of depression and other CMD in people living with HIV (PLWH) has the potential to improve adherence to antiretroviral therapy (ART) and thus physical outcomes (Abas et al., 2014a; Sin and DiMatteo, 2014). Identifying people with CMD using appropriately validated tools is the first step towards providing care for CMD (Akena et al., 2012b). Culturally appropriate and user friendly validated tools

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will be helpful for non-specialist workers, including lay health workers, to use to assess CMD and to guide clinical care.

The most widely used tool for screening for common mental disorders in Zimbabwe is the Shona Symptom Questionnaire (SSQ-14) (Patel et al., 1997), a non-specific tool that screens for possible depressive and anxiety disorders. The SSQ was previously validated in a general primary health care (PHC) population at a time when HIV prevalence in the general Zimbabwean population was only 5% (Mertens et al., 1989). At that time the prevalence of CMD in primary care in Harare was reported to be 52% using international criteria (i.e. criteria influenced by external western models, also known as etic criteria) and 59% using indigenous criteria (i.e. criteria influenced by culture and tradition, also known as emic criteria (Patel and Mann, 1997)). The current national prevalence of HIV infection is approximately 15% (Silverman et al., 2007) and contributes to the high public health burden at PHC level (Ferrand et al., 2010). As depression is twice as common in PLWH as in general populations and because depression symptoms in PLWH can overlap with HIV physical symptoms such as fatigue and appetite disturbance, it is important to validate tools for CMD in populations with high HIV prevalence (Tsai, 2014b). In LMIC, there are few validated tools for the screening of CMD in populations with a high prevalence of HIV (Chibanda et al., 2015a).

A further reason for validating tools is the emphasis in the last decade on disorder-specific tools both to improve care pathways for depression and anxiety and for research (Chibanda et al., 2014). The Patient Health Questionnaire (PHQ-9) for depression, and the Generalized Anxiety Disorder questionnaire (GAD-7) have each been found to be suitable screening tools for use at the PHC level in different settings (Kroenke and Spitzer, 2002; Kroenke et al., 2001; Monahan et al., 2009; Spitzer et al., 2006) but have not been validated in Zimbabwe, particularly in a high HIV-prevalent setting. Validating these tools both for screening and to guide treatment algorithms in our setting will enable researchers to better compare their findings with other populations receiving treatment in different locations, and to understand how depression and anxiety differ by geographic location and the composition of the patient population.

The aim of this study was to validate screening tools against a reference standard, the Structured Clinical Interview (SCID) of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), in a population with high prevalence of HIV in urban Zimbabwe.

2. Methods

2.1. Translation of tools

The first author, a bilingual psychiatrist (DC), carried out the first translation of the English versions of the PHQ-9 and GAD-into the local language, Shona. This draft Shona version was reviewed by a team including five Lay Health Workers (LHWs) working in a primary care mental health program (Chibanda et al., 2011) a bilingual clinical psychologist (DM), a bilingual counselor (EpM) and DC. This phase focused on ensuring contextual equivalence to the original versions based on their understanding and use of local terms for mental distress including kufungisisa (thinking too much) (Kidia et al., 2015; Patel and Mann, 1997), *kusuwa* (to feel sad), *kusuwisisa* (to feel very sad) and *mwoyo unorwadza* (painful heart) (Abas et al., 1994).

The Shona versions of the tools were back-translated into English by a different independent language expert. A committee of the first author with the clinical psychologist and counselor examined both the original and back translated versions and resolved any discrepancies by consensus.

2.2. Tools

SSQ-14: The Shona Symptom Questionnaire (Patel et al., 1997) was developed and validated in Zimbabwe. Most of the items are those common in tools for depression worldwide such as sleep disturbance and suicidal thoughts; others are local idioms of emotional distress including 'thinking too much'. Participants are asked if they have experienced a list of common mental health symptoms in the past week. Each of the 14 items are scored dichotomously as yes (1) or no (0) (Patel et al., 1997).

PHQ-9: The Patient Health Questionnaire, which asks about symptoms over the past 2 weeks, derives its scoring system from the DSM-IV criteria for depressive disorders. **Scores:** Minor depression (**cutoff: 0–9**); moderate/moderately severe depression (**cutoff: 15–19**); severe depression (**cutoff: 20–27)** assesses symptoms of depression as listed in the DSM-IV over the past two weeks. Each of the nine items is scored from 0 (not at all) to 3 (nearly every day). It is used as a continuous score ranging from 0 (no depressive symptoms) to 27 (all symptoms occurring daily), and as a binary measure, with a cut-point of 10 or greater recommended in the US, (sensitivity and specificity for major depression of 88%) (Kroenke and Spitzer, 2002).

PHQ-2: This screening tool comprises the first two items from the PHQ-9, which enquire about loss of interest or pleasure in doing things and feeling down, hopeless or depressed (Lowe et al., 2005). The PHQ-2 is often used as an initial brief screening for depression, with individuals scoring ≥ 3 out of 6 then receiving the full PHQ-9 (Lowe et al., 2005; Monahan et al., 2009).

GAD-7: The Generalized Anxiety Disorder Screen (GAD-7) is a 7-item Likert scale that has been validated for the assessment of GAD in both clinical and research environments in different cultural settings (Kujanpaa et al., 2014; Lowe et al., 2008; Ruiz et al., 2011; Zhong et al., 2015). It consists of 7 items which measure severity of symptoms according to reported responses with a maximum possible score of 21 (Spitzer et al., 2006).The questionnaire enquires about symptoms experienced in the last two weeks, such as "feeling nervous, anxious or on edge" and "not being able to stop or control worrying" (Lowe et al., 2008).

Structured Clinical Interview of the Diagnostic Statistical Manual for DSM-IV Axis I Disorders (SCID): The SCID is a diagnostic examination used to determine major mental disorders. It is administered by a trained mental health professional such as a psychologist or psychiatrist in order to make a diagnosis based on the Diagnostic Statistical Manual version IV (DSM-IV) (APA, 1994). The professional administering the SCID requires clinical skills in the use of open-ended questions, diagnostic evaluations and cultural knowledge in a wide range of mental, neurological and substance use disorders (Mezzich et al., 1999). In this validation study, the SCID was used to make a diagnosis of i) current major depression (mild, moderate and/or severe) and ii) GAD. Diagnosis of current major depression was based on the following 5 DSM-IV criteria met: A) five or more symptoms present for more than two weeks and represent a significant change from previous functioning; B) symptoms did not meet criteria for a mixed episode; C) symptoms caused significant impairment in social occupational functioning; D) symptoms were not due to the direct effects of a substance; and E) symptoms were not better accounted for by bereavement. For GAD, the following DSM-IV criteria were used: A) excessive anxiety and worry for at least 6 months; B) difficulty in controlling the worry; C) associated with 3 or more core symptoms; D) the focus of worry is not due to concerns of an Axis I disorder; E) the anxiety and worry causes clinically significant distress and impairment in functioning; F) the symptoms are not due to substance use.

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