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Validation of the Brief Mental Health Screening Tool (BMH)

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INTRODUCTION

Integrating mental health care into existing health systems requires addressing major knowledge gaps, including the development and assessment of interventions that integrate mental health screening into existing health systems.

Screening that is integrated into routine care should use measures that are short and easy to administer and promote high specificity given the meagre resources available to manage potential over-referral of cases. This study established the criterion-based validity of a Brief Mental Health (BMH) scale among chronic care patients attending primary care facilities against a nurse diagnosis using the Adult Primary Care (APC) guidelines.

The BMH is made up of three sub-scales making up seven items comprised of previously validated screening tools (PHQ2-depression, GAD2-anxiety and AUDC-substance abuse).

Nurse diagnosis using APC guidelines was chosen as the criterion given that, in South Africa, primary care patients are typically referred to professional nurses for assessment and diagnosis using APC following screening for all conditions.

METHOD

Following informed consent procedures, patients seeking care at 10 primary care facilities in the Amajuba District in KwaZulu-Natal were screened over a period of two weeks by trained field workers. Nurses remained blind to the BMH scores but were aware that the patient had undergone mental health screening.

In total 1214 patients were screened of whom 152 female and 106 male patients screened positive for alcohol abuse, 175 screened positive for depressive symptoms and 154 screened positive for anxiety symptoms.

Optimum cutoff scores for each of the three BMH subscales were calculated against nurse APC diagnosis of each of the three conditions as the criterion.

Box 1. Brief Mental Health (BMH) Screening Tool [MhINT Project]

Alcohol (Alcohol Use Disorders Identification Test AUD-C)

1. How often have you had a drink containing alcohol in the last year? A "drink" can be a bottle of beer, a glass of wine, a wine cooler, or one cocktail or shot of hard liquor (like whiskey, gin, vodka).						SCORE
Never	Monthly or less	Two to four times a month	Two to three times per week	Four or more times a week		
0	1	2	3	4		
2. How many drinks containing alcohol did you have on a typical day when you were drinking in the last year?						
Do not drink	1-2 drinks	3-4 drinks	5-6 drinks	7-9 drinks	10 or more	
0	0	1	2	3	4	
3. How often in the last year have you had 6 or more drinks on one occasion?						
Never	Less than monthly	Monthly	Weekly	Daily or almost daily		
0	1	2	3	4		
TOTAL SCORE (add the numbe for each question to get your total score)						
Scoring: A cut off score of ≥6 is screen positive						

Depression (The Patient Health Questionnaire – PHQ-2)

Over the past 2 weeks, how often have you been bothered by any of the following problems?					SCORE
	Not at all	1-7 days	8-11 days	12-14 days	
1. Little interest or pleasure in doing things	0	1	2	3	
2. Feeling down, depressed or hopeless	0	1	2	3	
TOTAL SCORE (add the numbe for each question to get your total score)					
Scoring: A cut-off score of ≥4 would be screen positive for depression					

Anxiety (Generalized Anxiety Disorder GAD-2)

Over the past 2 weeks, how often have you been bothered by any of the following problems?					SCORE
	Not at all	1-7 days	8-11 days	12-14 days	
1. Feeling nervous, anxious, or on edge	0	1	2	3	
2. Not being able to stop or control worrying	0	1	2	3	
TOTAL SCORE (add the numbe for each question to get your total score)					
Scoring: Cutoff of ≥ 4 would be screen positive for anxiety					

In all instances, screen positive means that the person has symptoms of the disorder and not necessarily the disorder itself. Patients who have been screened positive need to be referred for further assessment.

RESULTS

Scale reliabilities ranged from fair for the GAD (0.62) to acceptable for the PHQ2 (0.71) and AUDC (0.87). A specificity value of 80% to establish cutoff scores was used so as to minimize over referrals of false positives (Glascoe, 2005), though an increase in sensitivity above 50% would increase the number of referrals.

Using this value, the receiver operating curves (AUROC) scores that indicate the optimal cut off scores for each of the subscales against nurse-based APC diagnosis are presented in table 1 as are the percentage of patients correctly classified for each condition using these cut-offs.

Table 1 Recommended cut-off scores for each of the sub-scales

Scale	Recommended Cut off Score	Percentage of patients correctly classified
AUDC	>=6	8.8
PHQ2	>=4	14.4
GAD2	>=4	12.7

RECOMMENDATIONS

Using these optimal cut-off scores on the BMH as part of routine vital signs screening should assist to alert professional nurses to assess for common mental disorders in PHC facilities while at the same time not over-burdening them with too many false positive screens.

REFERENCES

Glascoe, F. P. (2005). Screening for developmental and behavioral problems. Mental Retardation and Developmental Disabilities Research Reviews, 11, 173-179.

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About PRIME

PRIME is a Research Programme Consortium (RPC) led by the Centre for Public Mental Health at the University of Cape Town (South Africa), and funded by the UK government's Department for International Development (UKAID). The programme aims to develop world-class research evidence on the implementation, and scaling-up of treatment programmes for priority mental disorders in primary and maternal health care contexts, in low resource settings.

Partners and collaborators include the World Health Organization (WHO), the Centre for Global Mental Health (incorporating London School of Hygiene & Tropical Medicine and King's Health Partners, UK), Ministries of Health and research institutions in Ethiopia (Addis Ababa University), India (Public Health Foundation of India), Nepal (TPO Nepal), South Africa (University of Kwazulu-Natal & Human Sciences Research Council) and Uganda (Makerere University & Butabika Hospital); and international NGOs such as Healthnet TPO and Sangath.

About MhINT

The Mental Health Integration Project (MhINT) is a collaboration between Universities of KwaZulu-Natal, Cape Town, ITECH South Africa and Washington University and funded by Centers for Disease Control (CDC).

In the context of the re-engineered PHC system, including integrated chronic care in South Africa, MhINT is a service delivery project providing technical support to the provincial Departments of Health in KwaZulu-Natal and Mpumalanga to scale up the integration of mental health care into primary health care based on the PRIME model".

The Southern African Research Consortium for Mental health INTegration (S-MhINT) is a research and capacity-building consortium that aims to use implementation science to strengthen regional mental health integration into primary health, antenatal, and chronic care platforms in under-resourced. S-MhINT is funded by the NIMH.

The S-MhINT is made up of three core components including the Administrative Core, Scale-Up Study and Capacity Building. The Administrative Core aims to establish and engage a trans-disciplinary research consortium of academics, government representatives and non-governmental organizations in South Africa, Mozambique and Tanzania to address the burden of common mental disorders in primary health care settings. The Administrative Core will manage all operations including developing monitoring systems for all S-MhINT activities and milestones, and a process evaluation of the partnership.

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