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REVIEW

Cross-cultural Adaptations of Mental Health Screening Tools: A Scoping Review

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Abstract

Purpose of Review This scoping review explores the extent and ways in which mental health assessment tools have been culturally adapted to be fit for purpose in new contexts.

Recent Findings In this review, the majority of recent studies reporting cultural adaptations were conducted in the Eastern Mediterranean, Europe, and Western Pacific. Assessment tools were adapted to 31 target languages, most frequently Arabic, Chinese, Persian and Korean. Most studies reported following a published cultural adaptation guideline; many reported overall positive validation results. Some studies reported needing to make further modifications to the adapted tool during validation and many concluded that further testing was required to increase generalisability.

Summary This review found few adaptations of mental health assessment tools for use in African and Latin American countries, representing a significant evidence gap. More research is also needed to analyse the studies' rigour and fidelity to existing adaptation guidelines and to determine the sufficiency of current recommended procedures in achieving cultural equivalence.

Keywords Mental disorders · Symptom assessment · Translations · Cross-cultural adaptation · Validation study

Introduction

Mental disorders are among the leading causes of morbidity globally [1, 2]. Depression and anxiety are among the most prevalent mental disorders contributing to disease burden (compared to severe mental disorders such as schizophrenia or bipolar disorder) [3]. National and regional estimates of disease burden vary considerably, with Australasia, Latin America, and high-income North America reporting the highest prevalence rates of all mental disorders [3]. Depressive disorders have the highest prevalence in regions of sub-Saharan Africa, North Africa, and the Middle East [3]. Prevalence estimates are important, both nationally and globally, as they offer crucial data for decision-making regarding policy and service improvements; they can also be used to identify and characterise populations at risk so that targeted prevention programs can be implemented [4, 5]. Therefore, it is essential to ensure that prevalence estimates accurately reflect the state of mental health in a population, and for this purpose, standardised measures used for screening and diagnosis are critical.

Access to free, online, adult mental health screening and diagnostic tools offers the opportunity to conduct

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population-level mental health surveys. Some tools require minimal, if any, training to administer and many have been validated for use among general or specific populations [6]. Although access to these tools has improved, many pre-validated screening tools designed to screen or assess symptoms of psychological distress and mental health disorders are presented in English. Most are also developed and validated in high-income or country contexts, most commonly in Europe or North America. These measures, although fastidiously curated to measure the elements of a psychological domain, naturally reflect the dominant linguistic and cultural norms within these settings [7].

The challenge of using pre-validated tools lies not only in ensuring the measures can be translated, but also in ensuring the translated measures make sense and have consistent internal reliability among populations outside those for which they were developed. Those wanting to use these screening and assessment tools outside their original settings are often tasked with translating and adapting them to a different social and cultural context. This can be problematic as mental health conditions and clinical presentations are known to be culturally and contextually shaped [6, 7] and simple translation of a tool without cultural considerations has been found to be inadequate [8].

Various guidelines for the cultural adaptation of mental health screening and assessment tools have been developed (e.g [9–12]). and validation studies of adapted tools published [6, 13]. However, these tools are often validated in single studies with non-representative samples, design issues and thus the generalisability of these validations is often inconclusive [6, 13]. Other attempts to assist cross-cultural mental health assessments include the Diagnostic and Statistical Manual, 5th Edition (DSM-5) Handbook on the Cultural Formulation Interview [14] and the Reporting Cultural Adaptation in Psychological Trials (RECAPT) criteria [15]. Although the importance of rigorous cultural adaptation and validation of screening tools has been acknowledged [6, 8], there appears to be little consensus in the literature about how to undertake this process.

This review aimed to map the literature reporting the cultural adaptation of validated mental health assessment tools. In doing so, the review will provide an overview of the available evidence regarding the process of cultural adaptation of these tools, as well as barriers and facilitators to this process. At the same time, it will allow us to identify and analyse gaps in the literature and guide recommendations for further research. This is an important first step in understanding the utility and implementation of current guidelines and how screening and assessment tools may be successfully adapted to ensure the ability to accurately identify and capture the presence of psychological distress and mental disorders.

Methods

We conducted a scoping review guided by the following objectives: to (i) describe studies in which the process of cultural adaptation of mental health screening and assessment tools is reported; (ii) identify key characteristics of adaptation and evaluation processes; (iii) describe the key elements of tool adaptation; and (iv) identify facilitators and barriers to effective cultural adaptation.

Scoping review methods, originally proposed by Arksey and O'Malley [16] and recently updated [17–19], were used as they permit a rigorous mapping of the evidence and identification of evidence gaps. Our methods are reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist [20] and the protocol was not published.

Search Strategy

A comprehensive search strategy was developed, pilot-tested and refined as necessary. Searches were conducted using four databases: Ovid MEDLINE, APA PsycINFO, Embase and Scopus and incorporated subject headings, synonyms, and text word searching. Search terms included those related to the main keywords: 'mental health', 'symptom assessment', 'cultural adaptation', and 'evaluation study'. See Supplementary File 1 for an example of the search strategy applied to MEDLINE. The search was limited to publications dated from 2013 to 17 July 2023. This duration was chosen to ensure the review provides an update of recent trends, challenges, and gaps in knowledge regarding the cultural adaptation of screening and assessment tools.

Review Criteria

Table 1 summarises the review criteria. Studies in which a mental health screening or assessment tool was only reported as translated verbatim from its original language, with no details provided in respect to cultural adaptations, were excluded. As there are many published guidelines for forward/backward translation, to be eligible for this review a study needed to state that forward/backward translation was conducted with the aim of cultural adaptation and outline the steps they took to this end. At a minimum, studies needed to report taking steps akin to those recommended by the World Health Organization Disability Assessment Schedule (WHODAS) which states that translators should 'always aim for a translation that captures the conceptual equivalent of the source language (typically English), not a word-by-word translation or etymological equivalent' [12].

Table 1 Review criteria

	Inclusion criteria
Population	Adult-age individuals (18 + years) who have undergone a validated mental health screening/assessment for symptoms of/diagnostic criteria for mental health disorder(s) or psychological distress that has been linguistically and culturally adapted for contexts or groups outside of that/those in which it was originally validated.
Exposure	The process of linguistic and cultural adaptation (forward-backward translation at a minimum), application, and evaluation of the cultural adaptation of the tool.
Comparator	Any comparator (e.g. the original tool before cultural adaptation) or no comparator.
Outcome	Any measure (quantitative evidence) or report of experience (qualitative) of the process, application, and evaluation of the adapted tool.
Study design	Any study design, from any country, published in English from 2013–2023.

Eligible tools needed to be previously validated (not a novel tool) to assess symptoms of/diagnostic criteria for a mental health disorder or psychological distress (hereafter referred to as 'mental health screening and assessment tools'). Studies assessing a combination of existing validated tools and additional novel tools/items were included.

Studies reporting on screening tools for both youth (< 18 years old) and adults (aged 18 + years) were included if findings for adult-age individuals were discernible in the results or if the average age of the study sample was 18 + years.

This review focused on peer-reviewed articles of primary studies; however, high-quality systematic reviews identified on this topic were eligible for consideration, with relevant findings summarised.

Study Selection

Titles and abstracts were screened within Rayyan, an online platform designed to support collaborative systematic review screening [21]. Full texts of selected records were retrieved and assessed against the inclusion criteria. Results were managed in Endnote [22]. 10% of records were double screened in parallel at each stage (MS and LH). Any conflicts were resolved through discussion with JM and RR and consensus; the remaining articles were screened by a single reviewer (n = 1170 title and abstract screens; n = 144 full-text screens) (MS).

Data Extraction and Synthesis

A data extraction form was developed and piloted. Study information for each source of evidence was extracted: study author, year, country, mental health tool adapted, condition being screened, source language, and target language.

Additionally, we charted information about the included studies' cultural adaptation process and any adaptation guidelines they followed, and well as validation study methods and study population characteristics. Both the results of the tool's validation and authors' final determinations were summarised.

Quality Assessment

As per scoping review methods, our aim was to provide an overview of the existing evidence rather than a critically appraised summary [16] and thus a quality assessment was not undertaken.

Results

Study Characteristics

A total of 73 studies met our review criteria [23–96]. Figure 1 displays the selection process results and Table 2 summarises the study characteristics. Just over half the studies (53%) were published in the last six years. Studies originated from 39 countries and most frequently came from China (n = 6), Iran (n = 5), Saudi Arabia (n = 5), and Spain (n = 4). Regionally, studies originated from the Eastern Mediterranean (n = 19), Europe (n = 19), Western Pacific (n = 16), Southeast Asia (n = 11), Africa (n = 4) and the Americas (n = 4). Most tools were adapted from English to another language (n = 65); some did not report the language of origin (n = 3), and the remaining were adapted from French, Chinese, Japanese, German or Dutch to another language. Thirty-one target languages were reported among studies, and they were most frequently Arabic (n = 10), Chinese (n = 9), Persian (n = 5) and Korean (n = 5). Two studies adapted their tool to more than one target language, while the remaining adapted to just one target language.

Screening Tool Characteristics

The range of validated tools used in the studies varied, but overall, 57 unique tools were reported. The most frequently reported tools were the Perceived Stress Scale (PSS-10) (n=4), Beck Depression Inventory (BDI-II) (n=3), Depression, Anxiety and Stress Scales – 21 Items (DASS-21) (n=3), and Posttraumatic Stress Disorder Checklist (PCL) (n=3). Conditions being screened for also varied, but frequently mentioned were commonly occurring mental health disorders: depression (n=26), anxiety (n=22), posttraumatic stress/distress (n=9), and psychological distress (n=8). Most studies adapted tools screening for one

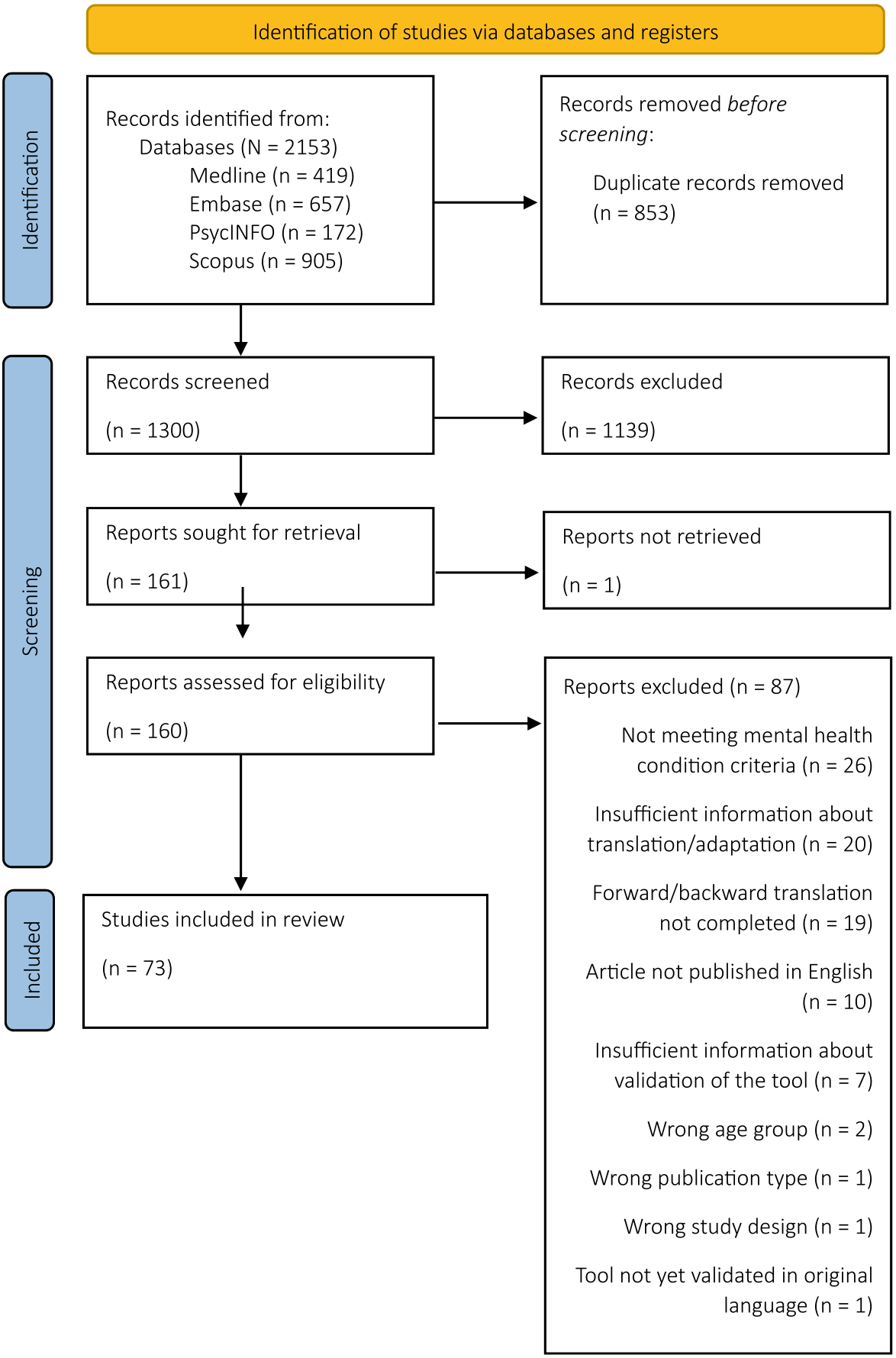
Identification of studies via databases and registers
Identification
Records identified from:
Databases (N = 2153)
Medline (n = 419)
Embase (n = 657)
PsycINFO (n = 172)
Scopus (n = 905)
Records removed *before screening*:
Duplicate records removed (n = 853)
Screening
Records screened
(n = 1300)
Records excluded
(n = 1139)
Reports sought for retrieval
(n = 161)
Reports not retrieved
(n = 1)
Reports assessed for eligibility
(n = 160)
Reports excluded (n = 87)
Not meeting mental health condition criteria (n = 26)
Insufficient information about translation/adaptation (n = 20)
Forward/backward translation not completed (n = 19)
Article not published in English (n = 10)
Insufficient information about validation of the tool (n = 7)
Wrong age group (n = 2)
Wrong publication type (n = 1)
Wrong study design (n = 1)
Tool not yet validated in original language (n = 1)
Included
Studies included in review
(n = 73)

Fig. 1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow chart

psychiatric domain; 18 studies adapted tools assessing two or more domains.

Study Process Characteristics

Processes and outcomes for the cultural adaptation and validation of mental health screening and assessment tools among included studies are presented in Supplementary file 2 and summarised below.

As a minimum requirement for inclusion in this review, studies needed to report having conducted a minimum of forward/backward translation in line with the process recommended by the WHO [12]. Fifteen studies (21%) met this minimum requirement with no other reported steps taken. The remaining studies reported having conducted one or more additional steps in the adaptation process before beginning validation. For example, approximately two-thirds of the included studies conducted pilot testing of the newly adapted tool with a sample of the target population. Eleven studies (15%) conducted cognitive interviews or debriefing with a sample of the target population prior to further validation testing and three studies (4%) conducted focus groups with a sample of the target population.

Most studies cited one or more published guidelines for translation and cultural adaptation of a screening tool; however, approximately a quarter of studies did not cite a specific guideline when reporting their adaptation methods. Thirty-four separate guidelines for translation and cultural adaptation were cited by the included studies (three of which were by the same author). Guidelines most frequently cited were those developed by Brislin [10, 97–99] (cited n = 14 times), Beaton et al. [9] (cited n = 11 times), and Sousa and Rojjanasrirat [11] (cited n = 7 times).

All included studies performed measures to validate the adapted tool with speakers of the target language and population of interest. Most frequently, clinical samples were used with participants having a condition or clinical characteristic of relevance to the tool being adapted (n = 41). University student samples were also common (n = 11) as well as non-clinical/general community samples or control groups (n = 19). Mean age of study samples, when reported, ranged from 19 to 68 years.

Methods for assessing the adapted tools' psychometric properties varied. Assessments for face validity were considered an eligibility criterion as part of the cultural adaptation process [12] and thus was conducted in all included studies. Sixteen studies also explicitly described assessing an adapted tool's content validity (e.g. inviting a panel of experts to rate the adapted tool using a rating scale). All studies also performed descriptive statistics to characterise the validation study population. Additional tests frequently performed included measures of reliability (internal consistency, n = 67; test-retest reliability, n = 34; inter-rater reliability, n = 7). Common measures of validity (e.g. convergent, concurrent, discriminant validity, known-groups validity) were evaluated in 49 studies. Factor analyses were conducted primarily by means of confirmatory factor analysis (n = 36 studies) and exploratory factor analysis (n = 22 studies). Measures of sensitivity and specificity (i.e. receiver operating characteristic curve analysis) were performed in 14 studies.

Validation Results

Studies reported mostly mixed but overall positive results from their respective tests, and nearly all indicated their adapted tool was ready for use in the selected population (see Supplementary file 2). Some studies reported making further modifications to the adapted tool (e.g. modifying cutoff scores, adding new or deleting existing items, or modifying the tool's original factor structure) (n = 20), and many noted in their concluding remarks that more validation testing on their adapted tool was required (n = 25). In addition to adapting an existing validated tool, one study also reported developing a novel, local screening tool to be used alongside or to supplement it [60]. One study [56] concluded their adapted tool could not be validated due to too few respondents being diagnosed with posttraumatic stress disorder (PTSD) to confirm a cutoff score in the target population. Another [66] determined that only one of two scales they had adapted demonstrated adequate psychometric properties.

Discussion

This study provides an overview of current evidence about the processes and outcomes of cultural adaptations to validated mental health screening and assessment tools. This review contributes usefully to the processes necessary to ensure that mental health research is conducted equitably and in a culturally safe manner across contexts – with the tools used for assessment. Over half of the 73 included studies were published in the last six years, meaning that the evidence presented here is current and highlights the recent growing interest in ensuring the cultural responsiveness and overall utility of these tools.

Not surprisingly, studies mostly reported on adapting an existing tool from English to another language, but several were translated from a non-English language of origin. Fewer studies (just eight of 73) concentrated on adapting tools for use in African and Latin American countries. This

Table 2 Characteristics of included studies ($n = 73$)

Authors	Year	Location	Tool translated/adapted	Symptom/disorder being assessed	Source language	Target language
Al Arfaj et al.	2016	Saudi Arabia	Cosmetic Procedure Screening Questionnaire (COPS)	Body dysmorphic disorder	English	Arabic
Al Mutair et al.	2018	Saudi Arabia	Mental Health Inventory Tool (MHI-38)	Psychological distress & wellbeing	English	Arabic
Al-Balhan et al.	2018	Kuwait	Nomophobia Questionnaire (NMP-Q)	Nomophobia	English	Arabic
AlHadi et al.	2017	Saudi Arabia	Patient Health Questionnaire (PHQ)	Depression, anxiety, somatic, panic, eating, and alcohol abuse disorders	English	Arabic
AlHadi et al.	2018	Saudi Arabia	Hamilton Depression Rating Scale (HAMD-7)	Depression	English	Arabic
Alosaimi et al.	2018	Saudi Arabia	Distress Thermometer (DT)	Psychological distress	English	Arabic
Ang et al.	2019	Malaysia	Covid-19 Burnout Scale (COVID-19-BS)	Psychological burnout	English	Malay
Appiah et al.	2020	Ghana	PHQ-9 (+4 others assessing mental health, not eligible for inclusion)	Depression	English	Twi
Bandari et al.	2019	Iran	Geriatric Anxiety Inventory (GAI)	Anxiety	English	Persian
Blackmore et al.	2022	Australia	Edinburgh Postnatal Depression Scale (EPDS)	Depression & anxiety	English	Dari
Bolghan-Abadi et al.	2013	Iran	Geriatric Anxiety Scale (GAS)	Anxiety	English	Persian
Cheffi et al.	2022	Tunisia	Hamilton Depression Rating Scale (HDRS)	Depression	French	Tunisian
Chen et al.	2023	China	Utrecht Gender Dysphoria Scale – Gender Spectrum (UGDS-GS)	Gender dysphoria	English	Chinese
Clemente et al.	2020	Portugal	Insomnia Severity Index (ISI)	Insomnia	English	European Portuguese
Constantini & Mazzotti	2020	Italy	COVID-19 Peritraumatic Distress Index (CPDI)	Peritraumatic distress	Chinese	Italian
Costas-Ramon et al.	2023	Spain	Postpartum Specific Anxiety Scale (PSAS)	Postpartum anxiety	English	Spanish
Dao-Tran et al.	2017	Vietnam	Perceived Stress Scale (PSS-10)	Psychological stress	English	Vietnamese
Delage et al.	2021	France	Prescription Opioid Misuse Index scale (POMI)	Opioid prescription misuse	English	French
Dias & Natividade	2022	Brazil	McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD)	Borderline personality disorder	English	Brazilian Portuguese
Dimaano et al.	2021	Philippines	Beck Depression Inventory Scale (BDI)	Depression	English	Visayan
Eskildsen et al.	2015	Denmark	Perceived Stress Scale (PSS-10)	Psychological stress	English	Danish
Ferrara et al.	2019	Italy	Nurses' Global Assessment of Suicide Risk scale (NGASR)	Suicidal tendency	English	Italian
Fitriana et al.	2022	Indonesia	Suicidal Ideation Scale (SIS)	Suicidal tendency	English	Indonesian
Fung et al.	2019	Taiwan	Post-Traumatic Stress Disorder Checklist for DSM-5 (PCL-5)	Post-traumatic stress disorder	English	Chinese
Goel & Kataria	2018	India	DSM-5 Level 1 Cross-Cutting Symptom Measure	13 psychiatric domains: depression, anger, mania, anxiety, somatic symptoms, suicidal ideation, psychosis, sleep problems, memory, repetitive thoughts and behaviours, dissociation, personality functioning, substance use	English	Hindi
Han et al.	2017	Korea	Suicidal Ideation Scale (SIS)	Suicidal tendency	English	Korean
Hani et al.	2016	Qatar	Calgary Depression Scale for Schizophrenia (CDSS)	Depression	English	Arabic
Hannan et al.	2016	United States	Perceived Stress Scale (PSS-10)	Psychological stress	English	Creole
Hasanzadeh et al.	2021	Iran	Postpartum Specific Anxiety Scale (PSAS)	Anxiety	English	Persian

Table 2 (continued)

Authors	Year	Location	Tool translated/adapted	Symptom/disorder being assessed	Source language	Target language
Hayashi et al.	2023	Japan	Public Health Research Foundation Stress Checklist Short Form (PHRF-SCL SF)	Psychological stress	Japanese	English, Chinese, Korean, Indonesian, Vietnamese
Ho et al.	2019	Hong Kong (China)	International Trauma Questionnaire (ITQ)	Posttraumatic stress disorder and complex posttraumatic stress disorder	English	Chinese
Horita et al.	2020	Japan	Counselling Center Assessment of Psychological Symptoms-62 (CCAPS-62)	Multiple domains: Depression, Generalized anxiety, Social anxiety, Academic distress, Eating concerns, Family distress, Frustration/anger, Substance use	English	Japanese
Housen et al.	2018	India	Hopkins Symptom Checklist-25 (HSCL-25) & Harvard Trauma Questionnaire-Posttraumatic Stress Symptoms Checklist (HTQ-16)	HSCL-25: depression and anxiety HTQ-16: posttraumatic stress	English	Kashmiri
Ibrahim et al.	2018	Iraq	Posttraumatic Stress Disorder Checklist for DSM-5 (PCL-5)	Posttraumatic stress disorder	Not reported	Arabic & Kurdish dialects: Sorani and Kurmanji
Ishfaq & Kamal	2019	Pakistan	DSM-5 Self-Rated Level 1 Cross-Cutting Symptom Measure—Adult	13 mental health domains: depression, anger, mania, anxiety, somatic symptoms, suicidal ideation, psychosis, sleep problems, memory, repetitive thoughts and behaviors, dissociation, personality functioning, substance use	English	Urdu
Jun et al.	2016	Korea	Depression, Anxiety, and Stress Scale −21 Items (DASS-21)	Depression, anxiety & stress	English	Korean
Kaiser et al.	2013	Haiti	Beck Depression Inventory (BDI) and Beck Anxiety Inventory (BAI)	Anxiety & depression	English	Kreyol
Karadag & Kokacya	2021	Turkey	COVID-19 Peritraumatic Distress Index (CPDI)	Peritraumatic distress	English	Turkish
Kralj et al.	2017	Croatia	Diagnostic Interview for Genetic Studies (DIGS)	Polydiagnostic assessment tool for major mood disorders, psychiatric disorders and their spectrum conditions	English	Croatian
Kumar et al.	2018	India	Depression, Anxiety, and Stress Scale −21 Items (DASS-21)	Depression, anxiety and stress	English	Hindi
Lasson et al.	2021	France	Düsseldorfer Orthorexia Skala (DOS)	Orthorexia nervosa	German	French
Lee et al.	2019	Korea	Depression, Anxiety, and Stress Scale −21 and 12 Items (DASS-21, DASS-12)	Depression, anxiety and stress	English	Korean
Li et al.	2022	China	ORTO scales (ORTO-15 and ORTO-R)	Orthorexia nervosa	English	Chinese
Liu et al.	2015	China	Mental Health Inventory (CM: MHI)	Psychological distress	English	Chinese Mandarin
Lv et al.	2021	China	Diabetes Eating Problem Survey-Revised (DEPS-R)	Disordered eating	English	Chinese Mandarin
Marchewka et al.	2020	Poland	Perceived Medical School Stress Instrument (PMSS-PL)	Psychological stress	English	Polish
Martin et al.	2015	Spain	Clinical Impairment Assessment (CIA)	Psychosocial impairment due to eating disorder features	English	Spanish
Meng et al.	2020	China	Perceived Stress Questionnaire (PSQ)	Psychological stress	English	Chinese
Mgbeojedo et al.	2022	Nigeria	Geriatric Depression Scale (GDS-15)	Depression	English	Igbo

Table 2 (continued)

Authors	Year	Location	Tool translated/adapted	Symptom/disorder being assessed	Source language	Target language
Micoulaud et al.	2022	France	Epilepsy Anxiety Survey Instrument (EASI)	Anxiety	English	French
Mosarezaee et al.	2020	Iran	Social anxiety questionnaire for adults (SAQ-A30)	Social anxiety	English	Persian
Mostafa Alim et al.	2019	Bangladesh	Beck Depression Inventory (BDI-II)	Depression	English	Bangla
Mounjid et al.	2022	Morocco	Perceived Stress Scale (PSS-10)	Psychological stress	English	Moroccan Arabic dialect
Munawar et al.	2021	Pakistan	McLean Screening Instrument for Borderline Personality Disorder (MSI-BPD)	Borderline personality disorder	English	Urdu
Netsereab et al.	2018	Eritrea	WHO self-reporting questionnaire-20 (SRQ-20)	Depression, anxiety and psychosomatic complaints, non-psychotic, grouped under the common mental disorders	Not reported	Tigrinya
Orive et al.	2013	Spain	Depression in the Medically Ill questionnaire (DMI-18) and its short version (DMI-10)	Depression	English	Spanish
Quinn et al.	2014	American Samoa	Semi-Structured Assessment for Drug Dependence and Alcoholism (SSADDA)	Alcohol use disorder	English	Samoan
Salimi et al.	2023	Iran	Global Psychotrauma Screen (GPS)	Symptoms of posttraumatic and complex posttraumatic stress, anxiety, depression, dissociation, substance abuse, sleep problems, self-harm behaviour and other stress-related problems	English	Farsi
Sanjaya et al.	2023	Indonesia	Brief Symptom Rating Scale 5 (BSRS-5)	Psychological symptoms including: insomnia, anxiety, depression, hostility, inferiority and additional symptoms	Not reported	Bahasa
Shafique et al.	2017	Pakistan	Symptom Checklist-90 (SCL-90)	Somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic, paranoid ideation, and psychoticism	English	Urdu
Simo-Sanz et al.	2018	Spain	Smartphone Addiction Inventory (SPAI)	Smartphone addiction	English	Spanish
Soron	2017	Bangladesh	Montgomery Asberg Depression Rating Scale (MADRS)	Depression	English	Bangla
Terluin et al.	2016	Turkey	Four-Dimensional Symptom Questionnaire (4DSQ)	Distress, depression, anxiety and somatization	Dutch	Turkish
Thalén-Lindström et al.	2013	Sweden	Distress Thermometer (DT)	Psychological distress	English	Swedish
Tiksnadi et al.	2023	Indonesia	Hospital Anxiety and Depression Scale (HADS)	Anxiety & depression	English	Indonesian
Toreki et al.	2013	Hungary	Edinburgh Postnatal Depression Scale (EPDS)	Antepartum depression	English	Hungarian
Van Praag et al.	2020	Netherlands	Posttraumatic stress disorder checklist (PCL)	Post-traumatic stress disorder	English	Dutch
Vissoci et al.	2018	Tanzania	Kessler Psychological Distress scale	Psychological distress	English	Swahili
Yee et al.	2017	Malaysia	Brief Psychiatric Rating Scale (BPRS-M)	Schizophrenia	English	Malay
Yehya et al.	2016	Qatar	Positive and Negative Syndrome Scale (PANSS)	Schizophrenia	English	Arabic
Yurtsever et al.	2021	Poland	Cosmetic Procedure Screening Questionnaire (COPS)	Body dysmorphic disorder	English	Polish
Zatti et al.	2020	Brazil	Personality Inventory for the DSM-5 – Brief Form (PID-5-BF)	Traits associated with 5 personality disorders	English	Brazilian Portuguese
Zhang et al.	2018	China	Perinatal Posttraumatic Stress Disorder Questionnaire (PPQ)	Perinatal posttraumatic stress disorder	English	Chinese

is concerning given that mental health disorder prevalence rates are thought to be underestimated in low- and middle-income settings [100], thus demonstrating the need for even more availability of valid tools in these regions. Most studies adapted a tool used to measure symptoms for common mental disorders, which reflects a practical need as prevalence rates for anxiety and depression are significant and detrimental to populations globally [100]. Other mental conditions that may be less common, such as schizophrenia, which incur more costs per person to societies [100], were less represented among the adapted tools and warrant more attention in the literature.

While studies included in this review described their adaptation process with sufficiency to determine their eligibility, levels of detail regarding the specific procedures (e.g. design and nature of pilot testing a newly adapted tool) within the adaptation varied between studies and thus make it difficult to draw conclusions about their relative effectiveness or fidelity to cited guidelines. Many of the validation studies included in this review also utilised small clinical samples which often provided little information about the adapted tool's generalisability and utility to the wider population. Still, nearly all studies in this review concluded that their adapted tool demonstrated adequate psychometric properties to recommend their use in the target population and language. This conclusion frequently coincided with an acknowledgement by study authors that further validation was required to increase confidence in the result or to improve generalisability.

Modifications to the adapted tool during the validation phase were also common, such as the need to remove items or change the cutoff scores to achieve adequate results. These changes often occurred based on results of applying common measures of invariance and speak to the importance of testing newly adapted tools for equivalence across groups [101, 102]. Notably, cultural explanations were often posited for unexpected or early inadequate validation results. For instance, Horita et al. [55] discussed the problems posed by the selected tool's questions related to alcohol and drug use during validation, problems that persisted despite having conducted, as reported by the authors, rigorous translation and back-translation procedures. They found that different drug regulations and cultural practices in Japan and the US made items related to drug use problematic, requiring them to remove seven items to maintain cultural equivalence and structural validity [55]. Similarly, Toreki et al. [89] suspected cultural factors at play in their finding that a much lower cutoff score was needed for their study population in screening for depression. According to the authors, these cultural factors shaped symptom presentation and reporting, and thus the experience of the illness itself [89].

While it was out of the scope of this review to conduct a critical assessment of the translation and adaptation steps reported in these studies, these initial observations suggest a future research agenda. Specifically, more evidence is needed to understand the mechanisms underpinning successful cross-cultural adaptations and whether the existing array of adaptation guidelines are achieving true cross-cultural equivalence, or even if such a cross-cultural equivalence is an attainable goal in all contexts. Studies describing cultural adaptation processes therefore need to provide adequate detail and consistency in reporting so that others can understand and replicate effective practices as well as lessons learned. The large number of existing guidelines for cross-cultural translation and adaptation suggests that a gold standard does not exist [43] and should be established as part of this investigation. However, we must also critically analyse whether existing validated screening and assessment tools, with their frequently high-income, Western origins, are even suitable for translation and adaptation using existing methods given longstanding awareness that conceptions and experiences of mental (ill) health vary greatly across and cultures and contexts and are shaped by these contexts and cultures [103, 104].

Culture shapes the ways in which mental health symptoms and psychological distress are experienced, interpreted, and reported. Thus, beyond differences in languages, the cross-cultural adaptation of mental health screening and assessment tools should also pay attention to cultural concepts of mental health and illness, differences in symptoms interpretation, causal explanations, and reporting styles, as well as idioms of distress. Disregarding these additional dimensions in the development and use of these tools may lead to potentially inaccurate results and the under- or over-estimation of mental health conditions in the target populations [103–105]. One possible solution that some have pursued is to develop a novel screening tool that is fully tailored to the target population [106, 107]. While this approach may help to ensure the local relevance and cultural responsiveness of a measure [106], there are drawbacks in a novel tool's ability to demonstrate level of need to international audiences and therefore impact on efforts to improve equitable access to care [60, 107]. It may also be a time and resource-intensive approach that is not feasible in all settings [107]. A minority of studies in this review pursued a hybrid model in which a combination of novel and existing items/tools were evaluated and ultimately used to complement one another [60, 73]. Future research should seek to assess these types of approaches as a possible solution to accurately screen for mental health symptoms in a population while also maintaining international relevance. This evidence will be crucial for informed decision-making among others working in this space around the optimal approach to take when faced

with the choice between using a previously adapted tool and/or developing a new one.

Strengths and Limitations

This scoping review updates our understanding of research reporting the processes and outcomes of cultural adaptations to mental health screening and assessment tools. This approach permitted a broad overview of the existing evidence and represents an important first step in understanding the effectiveness of current guidelines for cross-cultural translation and adaptation of mental health screening and assessment tools. Our inclusion of tools for a broad range of mental health concerns and target languages means that our findings are not biased toward a particular mental health condition or target population.

However, our scoping review is not without limitations. While this review provides a descriptive overview of evidence about cultural adaptations of mental health screening tools, it is out of the scope of this work to critically assess the rigour and quality of the evidence. A full systematic review is recommended to provide a thorough analysis and appraisal of the evidence, including the relative performance of these tools and adaptation guidelines across new settings and regions. The heterogeneity in use of adaptation guidelines, tools and target populations also limits our ability to synthesise findings in-depth. While we included studies adapting tools screening for substance misuse, our search did not specifically include substance-related terms, meaning we may have missed evidence in this area. Finally, our reliance on peer-reviewed research published in English between 2013 and 2023 means we may have missed evidence outside these dates, research conducted in real-world settings or research conducted in languages other than English.

Conclusions

This scoping review has provided an overview of current evidence describing cultural adaptations to validated mental health screening and assessment tools. A breadth of existing tools has been translated and culturally adapted for use in a wide range of settings across the world. However, the limited focus on adapting tools for use in African and Latin American countries reveals a significant gap that must be addressed to achieve equitable mental health outcomes globally. While most studies determined that the adapted tool was valid and ready for use in the selected population, various study authors also raised concerns about the accurate cross-cultural equivalence of the adapted tools. Moreover, the review revealed that study authors sometimes found it necessary to modify the adapted tool, whether removing items or changing cutoff scores, or even develop a novel tool to ensure cultural responsiveness. The large number of existing adaptation guidelines suggests that a gold standard does not yet exist. More research is needed to analyse the rigour and fidelity of these adaptations to existing guidelines and future studies should determine whether current recommended adaptation and validation procedures are producing the intended result for mental health screening in real-world settings.

Key References

- Ali G-C, Ryan G, De Silva MJ. Validated screening tools for common mental disorders in low and middle income countries: a systematic review. PLoS ONE. 2016;11(6):e0156939. https://doi.org/10.1371/journal.pone.0156939.

  This review provides a comprehensive summary of brief common mental disorder screening tools validated for use in low- and middle-income populations and provides insights into the generalisability and effectiveness of cross-culturally adapted tools.

- GBD 2019 Mental Disorders Collaborators. Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. Lancet Psychiatry. 2022;9(2):137−50. https://doi.org/10.1016/S2215-0366(21)00395-3.

  This analysis provides a globally relevant overview of prevalence and burden estimates from the Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) 2019 for 12 mental disorders, males and females, 23 age groups, 204 countries and territories, between 1990 and 2019.

- Meldrum K, Andersson E, Wallace V, Webb T, Quigley R, Strivens E, Russell S. Approaches to the development of new screening tools that assess distress in Indigenous peoples: a systematic mixed studies review. PLoS ONE. 2023;18(9):e0291141. https://doi.org/10.1371/journal.pone.0291141.

  This systematic mixed studies review assessed the extent of the literature related to approaches used to develop new tools to screen for distress in Indigenous adults and recommends that clinicians and

researchers consider whether the tools they are using to screen for distress in Indigenous peoples are valid for their target population.

- S. K. Chaturvedi S, Grover S, Nagendrappa BV, editors. Somatization Across Cultures. Oxford University Press; 2024. p. 231−42.

  This book describes somatization disorders in different cultures, including in special populations, understanding of the processes underlying somatization across cultures and nations, and management of such presentations.

- Switzer GE, Dew MA, Bromet EJ. Issues in mental health assessment. In: Aneshensel CS, Phelan JC, Bierman A, editors. Handbook of the Sociology of Mental Health. Dordrecht: Springer Netherlands; 2013. p. 115−41.

  Discusses historical roots, current practical issues, and future directions of the assessment of mental health in community-based populations.

- World Health Organization: World mental health report: transforming mental health for all. https://iris.who.int/bitstream/handle/10665/356119/9789240049338-eng.pdf?sequence=1 (2022). Accessed July 9 2024.

  WHO's latest analysis of country performance against the Comprehensive Mental Health Action Plan 2013–2030 shows that progress has been slow.

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Data Availability The authors confirm that the data supporting the findings of this study are available within the article and its Supplementary Materials.

Declarations

Competing interests The authors declare no competing interests.

Disclosure of Interest The authors have no conflicts of interest to declare.

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