WHO Mental Health Gap Action Programme (mhGAP) Intervention Guide: a systematic review of evidence from low and middle-income countries

Roxanne C Keynejad,[1] Tarun Dua,[2] Corrado Barbui,[3] Graham Thornicroft[1]

[1]Centre for Global Mental Health, Institute of Psychiatry, Psychology and Neuroscience, King's College London, London, UK; [2]Department of Mental Health and Substance Abuse, World Health Organization, Geneva, Switzerland; [3]Cochrane Global Mental Health and WHO Collaborating Centre for Research and Training in Mental Health and Service Evaluation, University of Verona, Verona, Italy
Correspondence to Dr Roxanne C Keynejad, Centre for Global Mental Health, Institute of Psychiatry, Psychology and Neuroscience, King's College London, London SE5 8AF, UK; roxanne.keynejad@kcl.ac.uk

ABSTRACT

Question Despite mental, neurological and substance use (MNS) disorders being highly prevalent, there is a worldwide gap between service need and provision. WHO launched its Mental Health Gap Action Programme (mhGAP) in 2008, and the Intervention Guide (mhGAP-IG) in 2010. mhGAP-IG provides evidence-based guidance and tools for assessment and integrated management of priority MNS disorders in low and middle-income countries (LMICs), using clinical decision-making protocols. It targets a non-specialised primary healthcare audience, but has also been used by ministries, non-governmental organisations and academics, for mental health service scale-up in 90 countries. This review aimed to identify evidence to date for mhGAP-IG implementation in LMICs.

Study selection and analysis We searched MEDLINE, Embase, PsycINFO, Web of Knowledge/Web of Science, Scopus, CINAHL, LILACS, SciELO/Web of Science, Cochrane, Pubmed databases and Google Scholar for studies reporting evidence, experience or evaluation of mhGAP-IG in LMICs, in any language. Data were extracted from included papers, but heterogeneity prevented meta-analysis.

Findings We conducted a systematic review of evidence to date, of mhGAP-IG implementation and evaluation in LMICs. Thirty-three included studies reported 15 training courses, 9 clinical implementations, 3 country contextualisations, 3 economic models, 2 uses as control interventions and 1 use

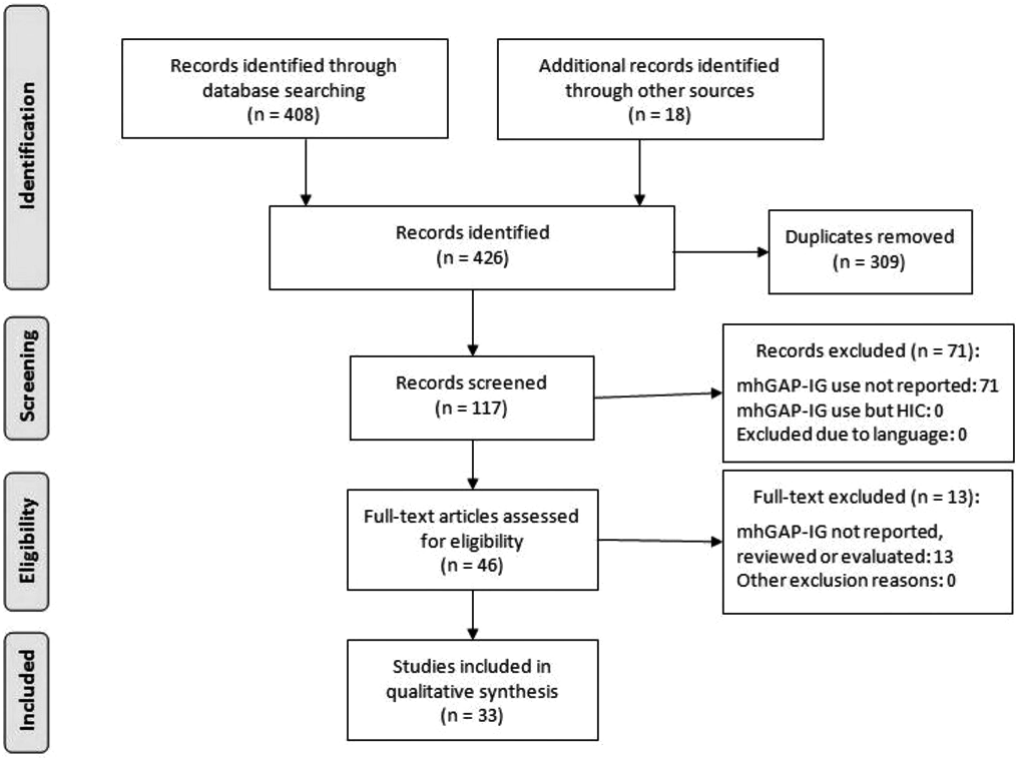

Figure 1 Flow of studies from identification to screening. HIC, high income country; mhGAP-IG, Mental Health Gap Action Programme Intervention Guide.

to develop a rating scale. Our review identified the importance of detailed reports of contextual challenges in the field, alongside detailed protocols, qualitative studies and randomised controlled trials.

Conclusions The mhGAP-IG literature is substantial, relative to other published evaluations of clinical practice guidelines: an important contribution to a neglected field.

BACKGROUND

Despite mental, neurological and substance use (MNS) disorders being highly prevalent, a vast gap exists between the need for services and their provision, worldwide. While 1 in 10 people has a mental health problem, only 1% of the global health workforce provides mental healthcare. WHO launched its Mental Health Gap Action Programme (mhGAP)[1] in 2008, and the Intervention Guide (mhGAP-IG)[2] in 2010, to bridge this gap. The mhGAP-IG provides evidence-based guidance and tools for the assessment and integrated management of priority MNS disorders in low and middle-income countries (LMICs), using clear protocols for clinical decision making. It is aimed at a non-specialised audience of primary care workers, but is also used by government ministries, non-governmental organisations and academic centres, to scale up mental health services in over 90 countries worldwide. Version 2.0 was published in 2016,[3] reflecting updated evidence and feedback from field users.

The first mhGAP-IG was used in over 80 countries and translated into more than 20 languages, as part of a package of work to develop nation-specific mental health action plans. However, it was observed that few research studies had directly assessed the use of the mhGAP-IG in LMICs, emphasising the need for evidence.[4] In particular, reports of barriers and facilitators to mhGAP-IG use, adherence and patient outcomes are required, to inform local, regional, national and global improvements.

Implementation science is defined as 'the scientific study of methods to promote the uptake of research findings into routine healthcare in clinical, organisational or policy contexts.'[5] WHO increasingly recognises the effects of 'real world' contextual factors on the implementation of evidence-based health interventions in clinical practice.[6] Acceptability, adoption, appropriateness, feasibility, fidelity, implementation cost, penetration and sustainability have been proposed as key outcomes for implementation research.[7] These outcomes are particularly important for learning from research conducted in heterogeneous LMIC settings, but may not be widely reported.

OBJECTIVES

Recently, Cochrane, the global network which produces systematic reviews of primary healthcare (PHC) and policy research, launched Cochrane Global Mental Health.[8] This was an acknowledgement of the need for evidence-based mental health research in LMICs, and in particular, for systematic reviews.

We set out to identify evidence for the practical implementation of the WHO mhGAP-IG in LMICs, in terms of how it has been used, evaluated and reported.

STUDY SELECTION AND SEARCH STRATEGY

This work was registered on the PROSPERO international prospective register of systematic reviews (Registration No. CRD42017068459).

Eligibility criteria

We included any type of study design, review or report of evidence, experience or evaluation of using the mhGAP-IG in LMICs. No papers were excluded based on language, and no relevant papers from high-income settings were identified.

Search strategy

We searched the following databases on 16–18 May 2017: Cochrane Library, CINAHL, EMBASE (1974 to May 2017), LILACS, Medline (1946 to May 2017), PsycINFO (1806 to May 2017), PubMed, SciELO, SCOPUS and Web of Science. Search terms were 'mental health gap action programme' OR 'mental health gap action program' OR 'mhGAP'. Searches were conducted in English but studies written in other languages were eligible for inclusion. The term 'intervention guide' was not included, due to its variable use in literature and in the field. In addition to database searches, the reference lists of relevant excluded papers were searched for relevant studies. Grey literature, including book chapters, conference workshops and web-based resources, was identified by repeating the search on Google Scholar. Studies published in LMICs were additionally sought through handsearching of non-Western online sources.

Study selection and data extraction

Figure 1 shows the flow of studies from identification to screening, eligibility and inclusion. The titles and abstracts of the 117 non-duplicated papers were screened by RCK, excluding 71, which did not review or report on the evidence, experience or evaluation of using the WHO mhGAP-IG. No papers were excluded which met inclusion criteria but came from a high-income setting. The remaining 46 full-text articles were assessed for eligibility by RCK, excluding a further 13 studies, which also did not review or report on the evidence, experience or evaluation of using the WHO mhGAP-IG. Data were extracted from the 33 papers eligible for inclusion, in the qualitative synthesis presented here, but the heterogeneity of mhGAP-IG uses, outcome measures and evaluations precluded meta-analysis. Data extracted included country involved, participants, sample size, nature of use, evaluation conducted and summary of findings.

FINDINGS

The uses of the mhGAP-IG reported by the 33 included papers fell into six categories. These were mhGAP-IG use in training (15 studies), mhGAP-IG use in clinical practice (9 studies), local mhGAP-IG adaptation (3 studies), economic modelling (3 studies), use as a control intervention in randomised controlled trials (2 studies) and in one case, as a model to develop a new rating scale. We review the included studies using these categories.

Use in training

Of the 33 included papers, 15 reported mhGAP-IG use in training (see online Supplementary file 1). Studies were conducted in seven African or Middle Eastern countries and four Asian countries. Ten courses trained non-medical PHC staff, two trained doctors,[9 10] one trained university student volunteers,[11] one trained volunteer 'champions'[12] and another, school teachers.[13] Sample sizes ranged from 12 in Sri Lanka to 1328 in the Philippines. Most studies reported experimental study designs, providing detail regarding participants, training and evaluation methods; three were more descriptive accounts, which did not include quantitative data.[9 14 15]

Only two studies explicitly stated that learners were trained using all modules of the mhGAP-IG,[16 17] although some studies did not clarify this. Most included papers used a subset of mhGAP-IG modules, with depression, psychosis, drug and alcohol use disorders, epilepsy and suicide being the most common[10 17–20]; three focused on developmental and behavioural disorders.[12 13 21]

Course durations varied from 3 hours training for teachers about attention deficit hyperactivity disorder, followed by a 1.5-hour booster session,[13] to 5 full days 'base course' followed by the mhGAP 'standard course'[16] or 40 hours child psychiatry training over 2 weeks.[21] Most training lasted 2–3 days, combining didactic lecture teaching with videos, role plays, communication exercises and discussions. Only five studies provided supervision to participants after training.[9 10 12 16 22]

Ten included papers measured participant learning using pre and post-training knowledge assessments, the most common of which came from the WHO mhGAP monitoring and evaluation toolkit. Five studies reported the number of patients with priority MNS disorders diagnosed and treated following training[10 16–19] but only three reported or measured learner feedback.[9 21 22] One study provided detailed information about the subsequent career paths of learners on a 2-year child psychiatry MSc programme, and their contributions to local mental health services and research.[21]

Two studies were protocols, but were included for their rich descriptions of the planned training intervention and evaluation.[10 19] One protocol's final results paper was also included.[20] The authors candidly outlined operational challenges arising during initial recruitment, which resulted in the ultimate published research differing significantly from the original protocol. They included a table comparing differences between what was planned and what was conducted, reflection on lessons learnt and listed challenges including lack of administrative support, lack of interest among PHC staff, difficulties with participant retention, unforeseen geopolitical eventualities, lack of locally tailored training resources and financial constraints. Another study reported local challenges, including the fact that training attendance was influenced by low per diem payments, which needed to cover accommodation and other expenses.[16] They noted that master trainers (experienced senior psychiatrists) were expected to cascade training without specific preparation, and recommended a formal introduction to the mhGAP-IG and its training approach. Methodological challenges highlighted by authors included selection of course attendants for prior interest in, or commitment to, mental health work, rather than a representative sample of healthcare staff.[10 18]

One study developed avatar-assisted cascade training, a tablet-based tool.[12] mhGAP-IG guidelines for developmental disorders were incorporated into animated, interactive narratives about three children and families, with training scenarios addressing psychoeducation, parent skills training, community participation, stigma and rights. 'Champion' volunteers delivered training to families of children with developmental disorders in their area. High initial costs of the system, which, once developed, provided an intervention at low cost, were addressed using a social franchise model. The authors summarise steps to replicate this public–private collaboration in other settings.

Use in clinical practice

Nine included papers described uses of the mhGAP-IG in clinical practice (See online supplementary table 2). Studies were conducted in three African, one Asian and one South American country. Although most also included mhGAP-IG use in training, they were distinguished from the previous section for focusing on clinical outcomes of mhGAP-IG use by staff, following training. Five studies used the mhGAP-IG to address a set of priority MNS disorders[23–27] and four addressed a single diagnosis, namely depression,[28–30] or alcohol use disorder.[31] Six studies measured rates of case identification,[23 24 26–29] three measured rates of follow-up[24 26 29] and three, clinical outcomes.[25 29 31]

Of the included clinical papers, seven worked with healthcare staff in a biomedical model and two from the same research group worked with traditional health practitioners (THPs; traditional and faith healers) in Kenya.[29 30] These studies showed that the mhGAP-IG depression module can be effectively used by THPs as well as more biomedical PHC workers, with depression diagnostic accuracy measures showing 86% specificity and 46% sensitivity.

Patient sample sizes varied from 65[24] in Haiti, to 1664 in Kenya,[28] and staff sample sizes from 11[26] in Nepal, to 360 in Ethiopia.[23] Two studies described clinical applications of the mhGAP-IG using

a mobile phone-operated 'app.' In Afghanistan,[27] an android-based mobile application using the mhGAP-IG, developed by a private enterprise, had been pretested for functionality and acceptability at Aga Khan Health Services in Pakistan and Afghanistan. Smartphones provided by the study were used by about 125 PHC staff in community and facility-based roles. The app featured capability for patient registration, blended learning, interactive mhGAP-IG use for screening and management decision making, store and forward, and teleconsultation. In Kenya,[28] a simple mhGAP-IG app was used for depression screening. Focus group discussions and key informant interviews supported its acceptability and feasibility.

Several studies reported a range of implementation factors. One listed context-related strengths and challenges,[23] such as political commitment, healthcare infrastructure, supervision and medication supply. Others conducted detailed evaluation of service user and health worker views and experiences.[25 26]

Local adaptation

Three papers reported local adaptations of the mhGAP-IG for their setting in Africa, the Middle East and Asia (see online supplementary table 3). One study[32] provided a detailed account of six steps taken to contextualise the mhGAP-IG in Nigeria, from situational analysis and stakeholder focus group discussions, to national consultation, pilot training and evaluation. It had a wider scope than the training (see online supplementary table 1) and clinical (see online supplementary table 2) studies, but involved a smaller sample size and was only conducted in one state. The other two studies were more descriptive in nature. One described the use of the mhGAP-IG in the Eastern Mediterranean, in new community mental health services in Gaza and the West Bank, without presenting any evaluations, or details of how the mhGAP-IG was tailored to the setting.[33] Another study described the adaptation of the mhGAP-IG dementia module for the Nepalese context, alongside cognitive assessment tools, postdiagnostic carer support and treatment protocols.[34] The authors expressed the intention to evaluate its acceptability, suitability and impact, but did not report any evaluation data or details on how contextualisation took place.

Economic modelling

Three included papers used the mhGAP-IG to conduct economic modelling (see online supplementary table 4). One paper used the mhGAP-IG epilepsy module to calculate the costs of full implementation and maintenance of recommended treatments in Zambia, as less than $25.00 per patient, per year.[35] The other two studies both used similar approaches (and had a researcher in common), with the first being an abstract describing economic modelling for India,[36] and the second a full publication of modelling for five LMICs participating in the PRIME (PRogramme for Improving Mental health carE) consortium: Ethiopia, India, Nepal, South Africa and Uganda.[37] This study used a dedicated tool to derive estimated total and incremental costs of scaled-up mental health service provision, broken down by mhGAP-IG diagnosis, type of expenditure and year of scale-up. Using identical methods for economic modelling in five diverse LMICs enabled the authors to calculate differences in costs of training, supervision and management, hospital-based services and inflation in different settings. They found that additional costs per year to reach target service coverage were less than $0.10 per head of population, in each country.

Other uses

Two papers used the mhGAP-IG as a control intervention for comparison in randomised controlled trials,[38 39] and one used its training model to pilot and develop a new rating scale, of therapist competence in global mental health (see online supplementary table 5). The first two studies, based in India and Pakistan,[38] and Zimbabwe,[39] are examples of next steps taken in the field to conduct robust, randomised controlled trials of the low-intensity psychosocial interventions advocated by the mhGAP-IG alongside consideration of pharmacotherapy. The use of the mhGAP-IG for controlled implementation of 'enhanced treatment as usual' represents a valuable opportunity to acquire rigorous evidence of its utility in a range of LMICs. The development of the ENACT (ENhancing Assessment of Common Therapeutic factors) rating scale[40] is a further important step in the growth of evidence-based practice and high-quality implementation science in the field of global mental health.

CONCLUSIONS AND CLINICAL IMPLICATIONS

WHO's mhGAP-IG constitutes a landmark evidence-based tool to further its Comprehensive Mental Health Action Plan 2013–2020, aiming ultimately to achieve Universal Health Coverage. A recent review found only six published experimental studies of non-communicable disease clinical practice guideline implementation in LMICs.[41] The literature of 33 studies using the mhGAP-IG identified by our systematic review is therefore relatively substantial. Our narrative synthesis demonstrates how the mhGAP-IG has been enthusiastically taken up by clinicians, government ministries, trainers, educators and academics in a range of LMICs. Uses range from anticipated uses for local adaptation, training and clinical practice, to more creative mobile applications for isolated PHC workers, tablet-based avatar-assisted family training, economic modelling to support the case for funding, novel rating scales and comparison interventions in randomised controlled trials. Despite uptake in 90 countries, the literature is dominated by studies from a small proportion, indicating that much implementation is either not evaluated, or evaluations have not been as widely shared as they could be, with potential to benefit practitioners in other LMICs. In some cases, reliance on relatively limited pre and post-training knowledge assessments misses the opportunity for rich, contextual implementation research, which discusses real-world challenges to widespread uptake and scale-up; there are notable exceptions.[16 18 20] The increasing publication of research protocols[10 19 25 38 39] prior to study completion, featuring valuable implementation details, and encouraging openness about lessons learnt, enhances global mental health literature considerably. Our narrative review identified the importance of reporting contextual strengths and challenges to implementation facing practitioners in the field, alongside protocols, qualitative studies and randomised controlled trials. We welcome the new Cochrane Global Mental Health focus on high-quality evidence in this neglected research field. A next step in the evolving journey to integrate research into clinical practice in global mental health is standardised evaluation methods for use with the mhGAP-IG.[41] This could facilitate collection of large data sets, informing wider insights into contextual adaptation and optimal implementation of this enthusiastically adopted tool for evidence-based mental health.

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