

Implementing the mhGAP-HIG: the process and evaluation of training primary healthcare workers in Khyber Pakhtunkhwa, Pakistan

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Background To address the treatment gap for common mental disorders in low- and middle-income countries facing humanitarian challenges, it is crucial to build the capacity of primary healthcare workers (PHCWs) and integrate mental healthcare into primary care settings.

Aims To investigate the effectiveness of a Mental Health Gap Action Programme Humanitarian Intervention Guide (mhGAP-HIG) adapted for use in Pakistan to build the capacity of PHCWs in Khyber Pakhtunkhwa.

Method Six mhGAP-HIG training workshops were conducted, each lasting for 5 days, across six districts of Khyber Pakhtunkhwa. A total of 105 PHCWs (74 primary care physicians and 31 clinical psychologists) were trained through these workshops. We used multiple triangulations for data collection and analyses. Paired-sample *t*-tests were applied to compare scores on knowledge questionnaires pre- and post-training and after 8 months. We also conducted thematic analysis to examine participants' feedback regarding the training, and performed content analysis on the participants' reflections on the adapted guide.

Results Our findings demonstrated significant improvements in PHCWs' knowledge related to the mental health conditions in the mhGAP-HIG. Their scores improved by 12.08%, increasing from 73.86% pre-training to 85.94% post-training. Noticeable improvements in knowledge were recorded for the modules 'Harmful use of alcohol and drugs' (22.56%), 'General principles of care' and 'Other significant mental health complaints' (15.15%), 'Acute stress' (13.80%) and 'Suicide' and 'Epilepsy' (13.13%). The thematic analysis of the feedback of the PHCWs and trainers recommended the use of the guide to strengthen pre-service training and broaden the scope of the initiative to train PHCWs across the province.

Conclusions This study underscores the feasibility of implementing an adapted mhGAP-HIG for training primary care physicians and clinical psychologists within the existing healthcare resources of Khyber Pakhtunkhwa. The preliminary findings endorse the scalability across other districts in the province.

With the increasing frequency of complex humanitarian challenges around the world, the impact of multiple concurrent crises on mental health is well-established.^{1,2} Already strained health systems in low- and middle-income countries (LMICs) often lack the capacity to adequately respond to the growing demand for mental healthcare.³ Many regions of Pakistan have been facing similar challenges, which are likely to worsen the existing burden of mental health needs.^{4,5} The critical situation is further compounded by low investment in mental healthcare, pervasive stigma, cultural barriers, gaps in human resources and inequitable service delivery.⁶

The province of Khyber Pakhtunkhwa, located in the north-western region of Pakistan, has been particularly vulnerable, as it has borne the brunt of conflict and terrorism, natural disasters, internal displacements and influx of refugee populations over the past three decades.⁷ For a population of over 40 million, there is a critical shortage and uneven distribution of mental health services in the province. There are approximately 50 psychiatrists (1 psychiatrist per 800 000 individuals), most of whom are concentrated in urban centres.⁸ Only 30% of Khyber Pakhtunkhwa's women and children have access to medical services, owing to cultural barriers and other socioeconomic restrictions.⁹

In 2021, the Ministry of Planning, Development & Special Initiatives (MoPD&SI) developed a multilayered, digital mental health and psychosocial support (MHPSS) service model, which is evidence-based and scalable.¹⁰ This model aims to build the capacity of a mental health workforce. As part of this initiative, primary healthcare workers (PHCWs), including the primary care physicians (PCPs) and clinical psychologists in Khyber Pakhtunkhwa, were offered training and supervision to manage common mental health conditions. For this purpose, the Mental Health Gap Action Programme Humanitarian Intervention Guide (mhGAP-HIG)¹¹ was contextualised to prepare a guide adapted for use in Pakistan and developed into a mobile application (app) – referred to as mhGAP-HIG-PK as training tools.¹²

This paper presents the first phase of capacity building for PHCWs, focusing on their training using the contextualised training tools. After the

training, PHCWs were required to seek supervision on at least 10 cases submitted through the app to receive their certificate. Six district-based WhatsApp groups were created that served as platforms for case-based discussions and peer-support throughout the 3-month supervision period. The detailed structure and outcomes of the supervision phase have been described elsewhere.¹³

Method

This study was conducted as part of the MHPSS Project, approved by the MoPD&SI, Government of Pakistan, under ethics letter no. 6(262) HPC/2020. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2013. The trainers and PHCWs participated voluntarily in the study. Informed verbal consent was obtained from all participants.

We present this study in four phases: (a) training needs assessment; (b) training of trainers; (c) training of PHCWs; and (d) feedback and reflections. We applied a triangulation method¹⁴ to both data collection and analysis across these phases of the study, as outlined below.

Training needs assessment

During this phase, we aimed to conduct a training needs assessment to determine the current condition of mental health services in Khyber Pakhtunkhwa, with particular emphasis on understanding the challenges encountered by PHCWs.¹⁵ For this, we applied a triangulation method to review the grey literature and conducted two focus group discussions (FGDs), each lasting 2 h. We recruited 17 participants (9 males; 8 females), including PCPs, clinical psychologists, International Medical Corps (IMC) staff and Khyber Pakhtunkhwa Health Directorate representatives, through convenience sampling. With the consent of participants, we audio-recorded the FGDs to collect data, which was then evaluated by two independent researchers following Braun & Clarke's thematic analysis approach.¹⁶

Training of trainers

Study design and sampling

Selecting trainers posed challenges as most qualified and experienced psychiatrists have full-time academic positions and private practice. We recruited eight trainers (five psychiatrists; three clinical psychologists) from or close to our target districts, using purposive sampling. The inclusion criteria included professional qualification, with at least 5 years of clinical and teaching experience (postgraduation), interested in professional development, inclined towards biopsychosocial practice, motivated to strengthen primary care services and having a track record of adherence to ethical

standards. Trainers participated voluntarily and received certificates for their contribution.

Training programme

We conducted online training of trainers over 3 weeks. In the first week, the digital copy of the mhGAP-HIG-PK was shared with the trainers to familiarise themselves with the assessment and management protocols in the guide. In the second week, trainers were oriented to the training methodology and assigned a module to prepare. In the third week, we held training sessions where each trainer delivered a teaching session of 1 h for the group.

To ensure uniformity in training pedagogies and maintain mhGAP-HIG fidelity across trainers, two external reviewers were engaged to assess trainers' competence. This was done using a single-masked (single-blind) approach, where trainers were unaware of the evaluation. The reviewers used a competency assessment form and evaluated trainers' preparation, contextual understanding, training delivery, organisation, time management and engagement with participants.¹⁵

Supervision of trainers

The trainers received hands-on supervision and guidance during the training workshops and the period of supervision through case-based discussions via the WhatsApp groups.

Training of PHCWs

The criteria for selecting the target districts included presence of refugee villages and logistic feasibility. Although a total of nine districts were selected, because of logistic constraints the participants were divided into six training workshops. These workshops were held between August and December 2023 in: Chitral; Haripur (for Haripur and Mansehra); Lower Dir, Mardan 1 (for Mardan and Swabi); Mardan 2 (for Mardan and Nowshera); and Peshawar (for Peshawar and Kohat).

Study design and sampling

We employed a quasi-experimental pre-post design for this phase. The respective district health officer nominated PCPs with at least 1 year of primary care experience and an interest in mental health training, and IMC staff recruited clinical psychologists who had either an MS degree or an advanced diploma in clinical psychology and 1 year of clinical experience. We aimed to achieve full gender parity, but only one-third of our cohort were female.¹⁷ The demographic details of all participants are presented in Table 1.

Training programme

A total of six 5-day training workshops on mhGAP-HIG were conducted in the six prioritised districts, followed by supervision for 3 months. Before

Table 1Demographics of the participating primary healthcare workers (*n* = 105)

Characteristic	Doctors, <i>n</i> (%)	Psychologists, <i>n</i> (%)
Gender		
Male	49 (47%)	18 (17%)
Female	25 (24%)	13 (12%)
Experience		
<5 years	17 (16%)	14 (13%)
5–10 years	37 (35%)	12 (11%)
> 10 years	20 (19%)	5 (5%)
Healthcare level		
Primary ^a	38 (36%)	29 (28%)
Secondary	35 (33%)	2 (2%)
Tertiary	1 (1%)	
Education level (doctors)		
MBBS	66 (89%)	
MBBS + MPH	3 (4%)	
MBBS + MCPS (Medicine)	3 (4%)	
MBBS + FCPS/MD (Internal medicine)	2 (2%)	
Education level (psychologists)		
MS Clinical Psychology		13 (42%)
Advanced Diploma in Clinical Psychology		15 (48%)
BS Clinical Psychology		3 (10%)

a. This includes government and non-governmental public health facilities.

training, PHCWs registered on the ministry's web portal for MHPSS and the Learning Management System (LMS) and downloaded the mobile app.

Daily sessions were reduced to 5.5 h to accommodate participants' lengthy commutes, with an added 30 min for home study. This structure resulted in a cumulative training duration of 30 h over 5 days. The training sessions were conducted using interactive learning methodologies, incorporating role-play, small group discussions and reflection activities to enhance engagement and comprehension.

Each day started with a 30 min 'recap session' of the previous day's modules. The average duration of each module was 90 min. The programme covered the introductory General principles of care (GPC), followed by modules: Acute stress (ACU), Grief (GRI), Depression (DEP), Post-traumatic stress disorder (PTSD), Psychosis (PSY), Epilepsy (EPI), Intellectual disability (ID), Harmful use of alcohol and drugs (SUB), Suicide (SUI), and Other significant mental health complaints (OTH).

We measured the knowledge of the PHCWs using a 25-item questionnaire administered pre-, post- and 8 months after the training.¹⁸ Higher knowledge scores reflect greater knowledge of the mental health conditions in the mhGAP-HIG.

Refresher training workshops

Owing to logistical constraints, we conducted only three refresher training workshops after 8 months; these were attended by 48 participants.

The content of these refresher workshops was informed by the areas highlighted by participants who attended the initial training workshops.

Feedback and reflections

We utilised data source triangulation by collecting feedback (both quantitative and qualitative) online from PHCWs; and module-specific reflections from both PHCWs and trainers. These reflections were collected during group discussions at the start of each training day, at the end of each module, and from written reports by the respective trainers at the end of each day.

Data analysis

Multiple triangulation analyses were used based on data type and collection phase. All data were cleaned, coded and anonymised before conducting analysis using IBM SPSS Statistics 26 for Windows. Descriptive statistics were reported as percentages or means with their corresponding standard deviation. Ninety-nine participants' pre- and post-training data, and 48 participants' 8-month refresher training data were analysed. For analysis, data were organised by district. Knowledge scores were compared across pre-, post- and 8-month assessments using paired *t*-tests, with items grouped into clusters corresponding to the mhGAP-HIG modules: GPC (2 items), ACU (3), Grief (2), PTSD (1), DEP (3), PSY (3), ID (2), SUB (3), SUI (2), EPI (2) and OTH (2). Qualitative feedback and reflections on the modules were evaluated using thematic and content analysis.¹⁹

Table 2Knowledge comparisons by district pre- and post-training ($n = 99$) and after 8 months ($n = 48$)

Area	Pre-training		Post-training		Paired <i>t</i> -test		After 8 months		Paired test	
	Mean	s.d.	Mean	s.d.	<i>t</i>	<i>P</i>	Mean	s.d.	<i>t</i>	<i>P</i>
Haripur	19.63	2.53	22.50	1.79	3.439	0.004	–	–	–	–
Chitral	18.07	3.95	21.29	3.77	2.527	0.025	20.3	2.75	2.37	0.042
Lower Dir	17.69	3.34	21.25	2.65	3.578	0.003	–	–	–	–
Mardan1	19.30	2.83	21.10	2.53	1.911	0.071	–	–	–	–
Mardan2	17.88	3.20	21.50	1.51	4.389	0.001	21.42	2.68	3.82	0.002
Peshawar	18.00	2.32	21.35	2.29	4.968	<0.001	20.90	2.70	4.03	0.001

Results

Training needs assessment

A desk review had revealed key systematic gaps in mental health service delivery in Khyber Pakhtunkhwa. These included insufficient human resources, inadequate training of PHCWs, no availability of training resources and the absence of any formal supervision or referral mechanism.^{7,9,20} Pre-service training in mental healthcare is not prioritised in the MBBS curriculum in Pakistan, with minimal implementation, limited clinical exposure, no dedicated examination and faculty shortage resulting in low student motivation.²¹ Literature also reports a severe dearth of specialist trainers and supervisors, especially in remote areas, owing to inequitable service distribution, limited incentives for supervisors and logistical barriers.^{22,23}

The FGDs corroborated the gaps identified in the desk review. PHCWs face a lack of opportunities for professional development and formal supervision. The participation of PCPs in training is constrained by staff shortages, lack of backfill and frequent transfers. There are gaps in their knowledge, skills and confidence to manage people with mental health problems. The PCPs are reluctant to deliver psychosocial care, owing to inadequate training, low incentives and

operational constraints. They are aware of stigma and cultural barriers experienced by patients, which result in alternative pathways to care and reliance on traditional and faith healers. They are concerned that difficult work environments, patient overload and limited consultation times often lead to practices that compromised patients' rights and service quality. Although the Health Information System in Khyber Pakhtunkhwa includes three indicators for mental disorders (DEP, EPI, SUB) no data are ever reported or made publicly accessible. Despite being available, clinical psychologists remain underutilised in public healthcare settings. Health representatives expressed policy-level challenges, including securing financial support and evidence-informed decisions.

PHCWs' training outcomes

Post-training outcomes

The analysis of pre- and post-training outcomes suggested encouraging levels of baseline knowledge among PHCWs. The percentage of correctly answered questions on the pre-training test was 73.86%, which increased to 85.94% on the post-training test, indicating a 12.08% increase in knowledge.

Table 3Knowledge comparisons by clusters pre- and post-training ($n = 99$)

Cluster (by mhGAP-HIG module)	Pre-training		Post-training		Paired <i>t</i> -test	
	Mean	s.d.	Mean	s.d.	<i>t</i>	<i>P</i>
GPC	1.10	0.65	1.40	0.60	3.545	<0.001
ACU	2.12	0.75	2.54	0.61	4.252	<0.001
GRI	1.90	0.30	1.95	0.22	1.393	0.167
PTSD	0.80	0.40	0.89	0.32	1.82	<0.07
DEP	2.28	0.78	2.53	0.61	2.362	0.02
PSY	2.46	0.61	2.74	0.53	3.089	0.003
ID	1.51	0.61	1.65	0.50	1.861	0.066
SUD	2.09	0.72	2.77	0.49	7.767	<0.001
EPI	1.36	0.68	1.63	0.51	3.483	0.001
SUI	1.28	0.54	1.55	0.56	3.766	<0.001
OTH	1.56	0.67	1.86	0.38	4.268	<0.001

mhGAP-HIG, Mental Health Gap Action Programme Humanitarian Intervention Guide; GPC, General principles of care; ACU, Acute stress; GRI, Grief; DEP, Depression; PTSD, Post-traumatic stress disorder; PSY, Psychosis; EPI, Epilepsy; ID, Intellectual disability; SUB, Harmful use of alcohol and drugs; SUI, Suicide (SUI); OTH, Other significant mental health complaints.

Table 2 demonstrates significant increase in knowledge scores post-training across districts. However, Mardan1 shows only a marginally significant increase, which implies a positive but less definitive impact of the training. Peshawar exhibited the most pronounced improvement ($P < 0.001$).

The decrease in standard deviations across districts post-training indicates a reduction in variability in participants' knowledge scores. This implies that disparities in knowledge have narrowed, leading to the attainment of a more uniform level of understanding or expertise among participants after the training, as has been previously reported.²⁴

Table 3 demonstrates the improvement by clusters in participants' knowledge comparisons. Overall, participants' knowledge significantly improved, from 18.46 to 21.48 ($P < 0.001$). Furthermore, each cluster also showed significant improvement on all modules except PTSD, GRI and ID. The module with the most noticeable improvements in scores was SUB (22.56%). This is followed by GPC and OTH (15.15%), ACU (13.80%), SUI and EPI (13.13%), PTSD and PSY (9.09%). On the other hand, the ID and GRI modules observed insignificant improvements, with percentage increases of 7.07 and 2.53% respectively.

Refresher training outcomes

The evaluation of refresher training workshops demonstrated significant improvement in mean knowledge scores, reaching 20.3 (s.d. = 2.75), 20.90 (s.d. = 2.70) and 21.42 (s.d. = 2.68) respectively (pre-training versus 8 months after the end of training) (Table 2). The refresher training focused on strengthening competencies in assessing depression (DEP module), suicide risk (SUI module) and children with intellectual disorders (including presentations like bedwetting and dissociation) (ID module). Psychosocial interventions were practised in role-play for conditions such as those in the ACU, GRI, DEP, ID and EPI modules and targeted discussions on pharmacological management for DEP, PSY and EPI.

Feedback and reflections

Quantitative feedback

The PHCWs' feedback provides insights into the programme's overall success and areas for enhancement (see [Supplementary file](#)). Notably, 75% rated their experience as excellent and 23% as good, indicating that the programme was highly effective and well-received.

Qualitative feedback

Thematic analysis of qualitative feedback indicates high participant satisfaction with both the training programme's content and the interactive pedagogy. The training appeared effective in strengthening knowledge and clinical skills, particularly in

identifying and managing mental health conditions.

Overall, the trainees expressed satisfaction with the training, deeming it both beneficial and informative. They particularly valued the interactive methodologies used, such as role-play and group discussions. One participant highlighted the effectiveness of these methods, stating 'The interactive method of training made the learning multifold'. In addition to the instructional approach, participants were appreciative of the provision of hard copies of the guide, which enhanced their learning experience.

Concerning the impact on knowledge and clinical skills, participants reported significant enhancements in their understanding and abilities related to the identification, diagnosis and treatment of mental disorders, incorporating holistic, psychosocial and pharmacological approaches. The training also improved their capabilities in making management plans, with one participant noting 'It became clearer whom to refer and whom to treat, who needs no treatment, who needs counseling, and who needs pharmacological intervention'. The trainees recognised and appreciated the expertise of senior trainers. They advocated for the broader dissemination of mhGAP training, refresher courses and the integration of the mhGAP-HIG-PK into the pre-service training of PHCWs.

Reflections on individual modules

The results of the analysis of trainers' reflections and trainees' feedback on individual modules are presented in Table 4 under three categories: category 1, the most beneficial aspect of training for enhancing knowledge, as identified by trainees; category 2, the most valuable training component for strengthening skills reported by trainees; category 3, trainers' reflections.

Discussion

This is the first coordinated effort to build the capacity of PHCWs in Pakistan focusing on training and supervision using the contextualised mhGAP-HIG-PK. The model of collaboration between the MoPD&SI (technical support), IMC (logistic and financial support) and provincial health department (nomination of PCPs) is likely to help scale up the initiative effectively across the province. Previous initiatives to build the capacity of PCPs in Pakistan lacked long-term planning and any lasting impact,^{23,25} whereas we provided post-training case-based supervision, which has been established as a recommended learning strategy for sustained impact for implementing mhGAP guidelines.^{26,27} Our findings from supervision also support the need to monitor the performance of PHCWs, as nearly half of them sought supervision for both assessment and management plans.¹³

The key highlights of our study include a collaborative approach, a diverse group of

Table 4Participants' reflections on individual mhGAP-HIG modules, by category of response^a

Module and response category	Reflections
<i>General principles of care</i>	
1	Discussion on examples of violations of the rights of people with mental disorders in our context Assessment of people with mental health conditions Reduce stress and strengthen social support (in Urdu)
2	Role-play: dos and don'ts of communication skills during a consultation Demonstration of breathing exercise (in Urdu)
3	This module was extremely important in making a shift from a disease-centred to person-centred approach Very detailed section, difficult to cover in 2 h
<i>Acute stress</i>	
1	Discussion on benzodiazepines – large group discussion on prevalent practice of benzodiazepine prescriptions and lack of knowledge about their harmful consequences Discussion on psychosocial interventions Management of dissociative states
2	Role-play on management of a child who presents with bedwetting (psychosocial intervention)
3	PCPs did not know much about stress and showed a keen interest. Clinical psychologists had average baseline knowledge, but gaps existed even in their skills to offer psychosocial interventions The module discussed presentation within a month of a stressful event, but trainees had many questions about the effects of stress that lasts for more than a month
<i>Grief</i>	
1	Everyone had some experience working with grief in their lives, and a large group discussion about how people respond to a loss was very helpful Discussion on providing support for culturally appropriate adjustment/mourning processes
2	Role-play on educating a person about common reactions to losses
3	In their existing practice, PCPs neither considered grief to be a condition nor recognised their role in supporting or guiding people in the community. At best, they would prescribe benzodiazepines to help grieving people overcome their distress PCPs seemed most interested in discussing the treatment of 'insomnia' after a loss
<i>Post-traumatic stress disorder (PTSD)</i>	
1	Discussion on the nature of the 'traumatic event' and cases from clinical experience were very helpful
2	Interview questions (skills) to assess PTSD
3	PCPs had a tendency to use the label 'PTSD' for all people who presented to them (with any symptoms) following a traumatic event
<i>Depression</i>	
1	High prevalence of depression is reported in primary care Depression may present primarily with somatic symptoms in Pakistan Pharmacological management Special groups, such as adolescents, pregnant women, and older adults
2	Role-play on assessment of depression, initially demonstrated by the facilitator, later practised in small groups Psychoeducation
3	Differentiating between depression and bipolar disorder was difficult and needed more time At least 2.5 h are needed
<i>Psychosis</i>	
1	Treatment of acute disturbance and challenges of restraining Discussion on balancing options for a rights-based approach while preventing harm to the person and others Anti-psychotic medicines, doses and side-effects

Continued

Table 4*Continued*

Module and response category	Reflections
2	Role-play on assessment of psychosis (eliciting hallucinations, delusions) Role-play on psychoeducation of carers
3	PCPs suspect cases of psychosis in their practice but lack the skills to assess systematically PCPs were familiar with the names of antipsychotic medications but lacked knowledge about doses, side-effects, contraindications, etc. Clinical psychologists knew very little about psychosis Assessment needs more practice, and at least 2 h are needed to teach the module PCPs expressed their reluctance to interview or perform a physical examination in cases of acute psychosis, including mania
<i>Intellectual disability</i>	
1	Risk of human rights violations Reversible causes of intellectual disability Effects on parents and carers Role of PCPs/psychologists to work with school systems
2	Assessment of intellectual disability Behavioural training techniques (using simple instructions, breaking down tasks into smaller steps and discouraging punishment) Psychoeducation of parents (providing information, inculcating hope and managing expectations).
3	A highly neglected aspect of the current training of doctors in Khyber Pakhtunkhwa Discussion on behavioural modification, especially the concept of rewards such as affection, attention, playtime, and not gifts was new for PCPs Clinical psychologists were inclined to discuss differential diagnoses of specific developmental disorders, such as autism spectrum disorder Clinical psychologists were inclined to discuss the use of standardised assessment tools The module needs at least 1.5 h
<i>Harmful use of alcohol and drugs</i>	
1	Large group discussion on stigma associated with the use of substances and how a person using substances is blamed and dismissed by healthcare providers Symptomatic management of opioid withdrawal Discussion on the rights of people with forced admissions and unregulated practices at 'detox centres'
2	Role-play on motivational interview (particularly the challenge to remain non-judgemental), initially demonstrated by the facilitator, later practised in small groups
3	The participants were unclear about their role in managing people presenting with harmful use of substances (before the training)
<i>Suicide</i>	
1	Large group discussions of rates of suicide and common methods in their districts, stigma, social, religious and cultural factors, the role of mental health professionals in suicide prevention Effects on families
2	Role-play on assessment of suicide risk (sensitive and non-judgmental interview), initially demonstrated by the facilitator, later practised in small groups
3	Stories shared by the participants were very helpful in highlighting issues related to suicide prevention There were many questions about impulsive acts of self-harm (without suicide suicidal intent) Discussion about confidentiality when someone discloses suicide intent was difficult
<i>Epilepsy</i>	
1	Management of status epilepticus Demonstration of recovery position (in one group, a video was shared by a participant) Differentiating between epileptic and non-epileptic seizures (included in the Acute stress module in the mhGAP-HIG-PK) Role of PCPs/clinical psychologists in ensuring treatment adherence
2	Role-play on psychoeducation
3	Clinical psychologists had no experience of working with people who had epilepsy. They believed that they had no role in these cases (before the training)

Continued

Table 4
Continued

Module and response category	Reflections
<i>Other significant mental health complaints</i>	
1	Personal experiences of PCPs sharing their difficulty in dealing with people when all investigations are clear, but there are constant demands for further investigations and medicines, including multivitamins Discussion on psychosocial interventions was very helpful
2	Demonstration of psychosocial interventions (particularly linking the symptoms with the patients' distress)
3	Most PCPs believed that a placebo helps in OTH symptoms (before the training) The participants reported that cases of mild depression, somatisation and anxiety frequently present in primary care and are often prescribed unnecessary medication and referred for excessive investigations This module needs to be emphasised in training and supervision as a priority for Khyber Pakhtunkhwa The module needs at least 2 h
	<i>Additional challenges reported by the trainers</i>
	To follow the content of the guide and not digress and give additional information from own experiences Needed to be reminded that they are teaching PCPs and not postgraduate students of psychiatry It would have been a much bigger challenge if the Urdu translations of the questions were not included Some were concerned that inadequate knowledge and skills might lead to mismanagement of cases Balancing the responsibility to cover the content of the module and responding to the queries and discussions raised by the participants during a limited time

mhGAP-HIG, Mental Health Gap Action Programme Humanitarian Intervention Guide; PCP, primary care physician; OTH, Other significant mental health complaints.

a. Category 1, the most beneficial aspect of training for enhancing knowledge, as identified by trainees; category 2, the most valuable training component for strengthening skills reported by trainees; category 3, trainers' reflections.

trainees, including PCPs and clinical psychologists, and a highly interactive training experience, with follow-up refresher training. Our use of a triangulation methodological approach improved the credibility and validity of the research findings.¹⁴

Selection of PHCWs

Despite the support of key stakeholders and well-defined criteria, we found the recruitment of PCPs challenging. As in other studies,²⁸ our objective was also to select those who are motivated to learn, have an interest in mental healthcare, and are willing to manage cases and seek supervision. Faregh et al²⁹ have pointed out that relegating the task of trainee selection to the beneficiary organisation does not yield best results in terms of training outcomes. Like Faregh et al, we also found that it is more convenient for district health offices to nominate PCPs who are readily available rather than identifying those who meet eligibility criteria. This challenge is further compounded by Pakistan's under-resourced and challenging healthcare system, which has led many doctors to emigrate for better job opportunities. Nadir et al³⁰ highlighted that one-third of medical students aspire to move overseas after graduation, leading to a critical loss of qualified medical practitioners, attributed to suboptimal remuneration, hectic work schedules, job insecurity, non-recognition of services and ineffective management.³¹ There is an imminent need to invest in younger, 'tech-savvy' doctors who choose to work in their districts, are interested in expanding their skills and are more likely to have overcome stigma associated with mental disorders to restore the socio-medical landscape of Pakistan.^{30,31}

This marked the first initiative in Pakistan in which PCPs and clinical psychologists participated as both trainers and trainees, which is consistent with mhGAP implementation in some other regions.^{3,32} Given the growing number of training programmes for clinical psychologists in Pakistan, they represent an underutilised mental health resource whose existing training gaps can be overcome through mhGAP training.³ The mixed group of participants helped shift discussions from a pure biomedical to a biopsychosocial approach and aligned with other task-sharing models.^{33,34}

Training methodology

Consistent with earlier studies, the availability of training resources in the form of our printed guide and mobile app proved to be valuable during training.^{28,35} The hard copies minimised reliance on technology and the internet, helped in better knowledge retention with personalised annotations, and enabled continuous learning outside the formal training sessions.³⁶ The Urdu translation of interview questions and psychosocial techniques in the guide were particularly helpful for trainees during role-play to build their confidence and improve skills to elicit symptoms and offer psychosocial interventions. Our efforts were aligned with

existing literature, recommending the contextual adaptation of mhGAP training resources into local languages to enhance comprehension and clinical applicability.^{3,29} We also agree that role-play with cultural examples of clinical presentations can help non-specialists to elicit symptoms better.^{28,35} The availability of the printed guide helped the trainers to avoid didactic teaching and the trainees to avoid taking notes. The workshops became more interactive and hands-on as the trainees engaged proactively in clinical discussions and skills demonstrations. Like Momotaz et al,³⁵ we also observed that the PHCWs were effectively engaged with the trainers' competence using a bilingual approach and facilitation skills. Having stated that, we found it difficult to cover the complete guide in 5 days, as this did not allow adequate time for desirable practice of clinical skills in role-play.³⁷ To compensate for this, we specifically designed refresher training to focus on skill-building through role-play in areas flagged by the PHCWs.

Evaluation of training

In the assessment of knowledge, pre-training test scores showed notable knowledge gaps on the modules on general principles of care, PTSD, suicide, harmful use of alcohol and drugs, and epilepsy. Significant knowledge gaps regarding suicide and the harmful use of alcohol and drugs were also found in other studies, and particularly in humanitarian settings.^{35,38,39} According to the United Nations Office on Drugs and Crime report,⁴⁰ 10.7% of the population of Khyber Pakhtunkhwa 'abused harder narcotics', which was nearly double the national average at that time. Since then, there has been an alarming rise in the use of illicit substances, but health professionals are not equipped to respond with basic psychosocial interventions.⁴¹ This gap is steadily being filled by commercial and sometimes unscientific detoxification services. Hence, we also made additional efforts to educate the PHCWs to protect the rights of people with substance use disorder by identifying it as a disorder and to prevent the common malpractice of forced hospital admission and unsafe practices.⁴²

The pre-training test also revealed consistent misconceptions about the statements that 'People with mental disorders cannot make decisions about their treatment' and 'Asking about suicide increases the likelihood of suicide'. These misconceptions highlighted deep-rooted stigma and misinformation related to mental illness and people with mental disorders in our cultural context. Mental illness is often misattributed to weak faith, demonic possession or moral transgression, and individuals experiencing it are perceived as dangerous, 'crazy' and incapable of friendship. Such perceptions contribute to their social exclusion, denial of human rights and reluctance to seek professional help.^{43,44} Alarming, this stigma is not limited to the general community; it also seeps among medical students

and healthcare professionals, highlighting the need for stronger emphasis on psychiatric education in pre-service training.⁴⁵ Despite being an alarming public health issue, suicide remains misunderstood owing to cultural and religious prohibitions. It is framed as a source of familial shame or an unforgivable sin, which prevents people from seeking help. A recent review on the need to address stigma for suicide prevention in Pakistan calls for the incorporation of mental health education into school curricula and community-based initiatives and the establishment of accessible mental health services.⁴⁶

The reflective process also revealed commonly held misconceptions and systemic gaps in medical practice. For instance, we know that limited recognition of somatic manifestations of mental disorders in primary care, frequent misdiagnoses and repetitive laboratory investigations act as a barrier to timely initiation of appropriate treatment.⁴⁷ Similarly, the prevailing disease-centred approach and the malpractice of prescribing benzodiazepines without being aware of their harmful consequences or addiction potential had to be emphasised during the training sessions.⁴⁸

The PCPs acknowledged a gap in their understanding of commonly neglected issues associated with children, such as bedwetting. Role-play was found to be effective in practising the technique of psychoeducation in this scenario. The skill to support the parents of children with intellectual disability was another crucial gap. In Pakistan, high rates of depression and anxiety were found among such parents.⁴⁹ The cumulative social, emotional and financial burden placed on these families highlights the necessity of equipping PHCWs with the skills to educate and support the families.

Evaluation of post-training knowledge

The results of the post-training evaluations were encouraging, with a significant increase in knowledge shown at the end of training and after 8 months – a trend reported in other countries.^{27,28} The refresher training confirmed retention of knowledge among PHCWs over this period. We were able to confirm long-term knowledge retention in only half of our original cohort because of logistical and budgetary constraints. However, based on the similarities in our demographic analysis and post-training scores of all districts, we believe that knowledge retention is likely to be consistent in the other districts as well.

Limitations of the study

We acknowledge specific limitations of our work. First, the grouping of districts was based primarily on logistical considerations rather than contextual variables. In future studies, district grouping could be refined using more relevant criteria – such as urban–rural classification, or service accessibility – to relate to the contextual relevance. Second, our pre- and post-training evaluations of PHCWs'

existing capacity might have been more robust by using additional measures to assess skills, attitudes and confidence. Third, for sustainable outcomes we consider it vital to engage the trainers formally, preferably through financial or career incentives. Fourth, we need to make greater efforts to work with healthcare authorities to carefully recruit PHCWs based on their clinical experience and interest. Last, we believe that either the training time needs to be increased or fewer modules need to be prioritised, so that critical skills are adequately demonstrated and practised during the training.

Future directions

Mental health must be identified as a public health priority at the provincial level. A sustainable coordinating mechanism is needed between the health department, humanitarian agencies and development partners. Currently, many projects are undertaken in silos, with blurred and short-term outcomes. A clear direction needs to be set, with focused objectives to optimise resource utilisation.

An average district in Khyber Pakhtunkhwa has at least 100 doctors working at the primary care level, who are a huge potential resource for providing MHPSS services.³⁴ Our work demonstrates a way forward to scale up capacity-building initiatives and develop a multidisciplinary PHCW workforce across the province. For this reason, regular posts for clinical psychologists should be created in primary healthcare facilities. Additionally, we recommend incorporating the mhGAP-HIG-PK into pre-service medical training, as the successful implementation of the mhGAP guidelines in undergraduate and post-graduate programmes for medical and allied specialties is well-documented.⁵⁰

Supplementary material

Supplementary material is available online at <https://doi.org/10.1192/bjpi.2025.10059>.

Data availability

The data used in this study is available on request from the corresponding author.

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Author contributions

A.H. led this initiative as a master trainer and supervisor, and was also responsible for project administration and conceptualisation of the study. A.N. curated the data and conducted the analysis. A.H. and A.N. jointly devised the method and composed the original draft. The manuscript was edited and reviewed by A.H.

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Declaration of interest

None.

References

- Sharpe I, Davison CM. Climate change, climate-related disasters and mental disorder in low- and middle-income countries: a scoping review. *BMJ Open* 2021; 11: e051908.
- Kola L, Kohrt BA, Hanlon C, Naslund JA, Sikander S, Balaji M, et al. COVID-19 mental health impact and responses in low-income and middle-income countries: reimagining global mental health. *Lancet Psychiatry* 2021; 8: 535–50.
- World Health Organization. *Stories of Change in Four Countries: Building Capacity for Integrating Mental Health Care within Health Services across Humanitarian Settings*. WHO, 2021.
- Riaz MMA, Nayyer B, Lal A, Nawaz FA, Zil-E-Ali A. Climate change and mental health: a call to action to include mental health and psychosocial support services (MHPSS) in the Pakistan flood crisis. *BJPsych Int* 2023; 20: 56–8.
- Shoib S, Tayyeb M, Armiya'u AY, Shah J, Swed S, Chandradasa M. Suicide bombing and impending mental health disaster in Pakistan. *Int J Surg Global Health* 2024; 7: e0096.
- Thompson AM, Saleem SM. Closing the mental health gap: transforming Pakistan's mental health landscape. *Front Health Serv* 2025; 4: 1471528.
- Asian Development Bank. *Khyber Pakhtunkhwa Health Sector Review: Hospital Care*. Asian Development Bank, 2019 (<https://www.adb.org/sites/default/files/publication/546006/khyber-pakhtunkhwa-health-review-hospital-care.pdf>).
- Pakistan Bureau of Statistics. *2017 Provincial Census Report, Khyber Pakhtunkhwa*. Pakistan Bureau of Statistics, 2017 (https://www.pbs.gov.pk/sites/default/files/population/census_reports/pcr_kp.pdf).
- Asian Development Bank. *Khyber Pakhtunkhwa Health Systems Strengthening Program: Report and Recommendation of the President*. Asian Development Bank, 2022 (<https://www.adb.org/projects/documents/pak-54297-001-rp> [cited 16 Mar 2024]).
- Ministry of Planning, Development & Special Initiatives. *PD&SI Launches Mental Health Guide & Digital Tool Kit on World Mental Health Day*. MoPD&SI, Government of Pakistan, 2022 (https://www.pc.gov.pk/web/press/get_press/819#:~:text=The%20MHPSS%20was%20launched%20on,guest%20who%20launched%20the%20model [cited 9 Apr 2025]).
- World Health Organization, United Nations High Commissioner for Refugees. *mhGAP Humanitarian Intervention Guide (mhGAP-HIG): Clinical Management of Mental, Neurological and Substance Use Conditions in Humanitarian Emergencies*. WHO, 2015 (<https://www.who.int/publications/i/item/9789241548922> [cited 14 Feb 2024]).
- Ministry of Planning, Development & Special Initiatives. *mhGAP-HIG-PK: The mhGAP Humanitarian Intervention Guide (Adapted for Pakistan)*. MoPD&SI, Government of Pakistan, 2022 (<https://pc.gov.pk/uploads/downloads/mhGAP-HIG-PK.pdf>).
- Humayun A, Najmussaqib A, Muneeb NA. Supervision-based evaluation of primary healthcare workers' performance after mhGAP-HIG training in Pakistan. *SSM Ment Health* 2025; 7: 100451.
- Noble H, Heale R. Triangulation in research, with examples. *Evid Based Nurs* 2019; 22: 67–8.
- World Health Organization. *mhGAP Training Manuals for the mhGAP Intervention Guide for Mental, Neurological and Substance Use Disorders in Non-specialized Health Settings – Version 2.0 (For Field Testing)*. WHO, 2017.

- 16 Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psychol* 2006; 3: 77–101.
- 17 World Health Organization. *Mainstreaming Gender within the WHO Health Emergencies Programme: 2022–2026 Strategy*. WHO, 2022.
- 18 World Health Organization. *mhGAP Humanitarian Intervention Guide (mhGAP-HIG) Training of Health-Care Providers: Training Manual*. WHO, 2022 (<https://www.unhcr.org/sites/default/files/legacy-pdf/6253f78c4.pdf>).
- 19 Elo S, Kyngäs H. The qualitative content analysis process. *J Adv Nurs* 2008; 62: 107–15.
- 20 Humayun A, Muneeb N ul A, Najmussaqib A, Haq I ul, Asif M. Bridging the gaps: contextualizing the mhGAP Humanitarian Intervention Guide to implement in Pakistan. *MedRxiv* [Preprint] 2025. Available from: <https://doi.org/10.1101/2025.05.21.25327990>.
- 21 Javed A, Khan MNS, Nasar A, Rasheed A. Mental healthcare in Pakistan. *Taiwan J Psychiatry* 2020; 34: 6.
- 22 World Health Organization Eastern Mediterranean Region. *WHO Mental Health Gap Action Programme (mhGAP) Pilot District Implementation Planning Workshop*. WHO, 2017 (<https://www.emro.who.int/pak/pakistan-events/who-mental-health-gap-action-programme-mhgap-pilot-district-implementation-planning-workshop.html> [cited 21 Mar 2024]).
- 23 Humayun A, Haq I, Khan FR, Azad N, Khan MM, Weissbecker I. Implementing mhGAP training to strengthen existing services for an internally displaced population in Pakistan. *Global Ment Health* 2017; 4: e6.
- 24 Griffiths KM, Carron-Arthur B, Parsons A, Reid R. Effectiveness of programs for reducing the stigma associated with mental disorders: a meta-analysis of randomized controlled trials. *World Psychiatry* 2014; 13: 161–75.
- 25 International Medical Corps. *Rapid Mental Health and Psychosocial Support Needs Assessment in Haripur, Mansehra and Lower Dir Afghan Refugee Villages of Pakistan*. International Medical Corps, 2021 (<https://cdn1.internationalmedicalcorps.org/wp-content/uploads/2017/07/2021-Pakistan-MHPSS-Assessment.pdf>).
- 26 Al-Uzri M, Al-Taiar H, Abdulghani EA, Abbas YA, Suleman M. Impact of mhGAP-IG training on primary care physicians' knowledge of mental, neurological and substance use disorders in Iraq. *BJPsych Int* 2024; 21: 14–6.
- 27 Keynejad R, Spagnolo J, Thornicroft G. WHO mental health gap action programme (mhGAP) intervention guide: updated systematic review on evidence and impact. *Evid Based Ment Health* 2021; 24: 124–30.
- 28 Tarannum S, Elshazly M, Harlass S, Ventevogel P. Integrating mental health into primary health care in Rohingya refugee settings in Bangladesh: experiences of UNHCR. *Intervention* 2019; 17: 130.
- 29 Faregh N, Lencucha R, Ventevogel P, Dubale BW, Kirmayer LJ. Considering culture, context and community in mhGAP implementation and training: challenges and recommendations from the field. *Int J Mental Health Syst* 2019; 13: 58.
- 30 Nadir F, Sardar H, Ahmad H. Perceptions of medical students regarding brain drain and its effects on Pakistan's socio-medical conditions: a cross-sectional study. *Pak J Med Sci* 2023; 39: 401–3.
- 31 Meo SA, Sultan T. Brain drain of healthcare professionals from Pakistan from 1971 to 2022: evidence-based analysis. *Pak J Med Sci* 2023; 39: 921–5.
- 32 Kokota D, Lund C, Ahrens J, Breuer E, Gilfillan S. Evaluation of mhGAP training for primary healthcare workers in Mulanje, Malawi: a quasi-experimental and time series study. *Int J Ment Health Syst* 2020; 14: 3.
- 33 Spagnolo J, Lal S. Implementation and use of the Mental Health Gap Action Programme Intervention Guide (mhGAP-IG): a review of the grey literature. *J Glob Health* 2021; 11: 04022.
- 34 Raviola G, Naslund JA, Smith SL, Patel V. Innovative models in mental health delivery systems: task sharing care with non-specialist providers to close the mental health treatment gap. *Curr Psychiatry Rep* 2019; 21: 44.
- 35 Momotaz H, Ahmed H, Jalal Uddin MM, Karim R, Khan M, Al-Amin R, et al. Implementing the Mental Health Gap Action Programme in Cox's Bazar, Bangladesh. *Intervention* 2019; 17: 243.
- 36 Mehnaz A, Baig LA, Aly SM. Difference in memory recall among medical students after reading printed text (hard copy) vs. on screen text (soft copy). *J Pak Med Assoc* 2021; 71: 1450–4.
- 37 Engelhard C, Haack S, Alik T. Implementation of the Mental Health Gap Action Programme (mhGAP) in Kosrae State in the Federated States of Micronesia. *Asia Pac J Public Health* 2021; 33: 784–5.
- 38 Ahrens J, Kokota D, Mafuta C, Konyani M, Chasweka D, Mwale O, et al. Implementing an mhGAP-based training and supervision package to improve healthcare workers' competencies and access to mental health care in Malawi. *Int J Ment Health Syst* 2020; 14: 11.
- 39 Greene MC, Haddad S, Busse A, Ezard N, Ventevogel P, Demis L, et al. Priorities for addressing substance use disorder in humanitarian settings. *Confl Health* 2021; 15: 71.
- 40 United Nations Office on Drugs and Crime. *Drug Use in Pakistan 2013*. UNODC, 2013 (https://www.unodc.org/documents/pakistan/Survey_Report_Final_2013.pdf).
- 41 Anti-Narcotic Force KPK. *ANF Hospitals – Addicts Treatment & Rehabilitation Centres (MATRCs)*, Anti-Narcotic Force KPK, 2024 (<https://anf.kpk.gov.pk/rehabilitation/> [cited 25 Mar 2024]).
- 42 Lassi N. Legislating anti-torture reform and harm reduction services to protect incarcerated opioid users in Pakistan. *Pakistan J Int Affairs* 2022; 5: 115–30.
- 43 Mansoor N, Warsi A. Battling the social stigma of mental illnesses in Pakistan; what needs to be done? *J Pak Med Assoc* 2023; 73: 1943.
- 44 Javed MA, Ahsan W, Khattak UK, Afzal S. Stigma associated with seeking psychiatric care among the general population of Islamabad, Pakistan. *Pak J Public Health* 2024; 14: 33–7.
- 45 Husain MO, Zehra SS, Umer M, Kiran T, Husain M, Soomro M, et al. Stigma toward mental and physical illness: attitudes of healthcare professionals, healthcare students and the general public in Pakistan. *BJPsych Open* 2020; 6: e81.
- 46 Mashhood A, Saeed G, Sami F. Sociocultural perceptions of suicide in Pakistan: a systematic review & qualitative evidence synthesis. *SSM Ment Health* 2025; 7: 100433.
- 47 Wazir MNK, Kakakhel S, Gul AN, Awan Q, Khattak AF, Yousaf N, et al. Psychiatric illnesses, somatic complaints, and treatments in a tertiary care hospital in Khyber Pakhtunkhwa, Pakistan: a cross-sectional study. *Cureus* 2023; 15: e43151.
- 48 Naqvi HA, Sabzwari S, Hussain S, Islam M, Zaman M. 446 General practitioners' awareness and management of common psychiatric disorders: a community-based survey from Karachi, Pakistan. *East Mediterr Health J* 2012; 18: 446–53.
- 49 Azeem MW, Dogar IA, Shah S, Cheema MA, Asmat A, Akbar M, et al. Anxiety and depression among parents of children with intellectual disability in Pakistan. *J Can Acad Child Adolesc Psychiatry* 2013; 22: 290–5.
- 50 Iversen SA, Ogallo B, Belfer M, Fung D, Hoven CW, Carswell K, et al. Enhancing mental health pre-service training with the WHO mhGAP Intervention Guide: experiences learned and the way forward. *Child Adolesc Psychiatry Ment Health* 2021; 15: 1.