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Facilitators and Barriers Influencing Tertiary Medical Institutions Physicians' Willingness to Participate in mhGAP Training

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Abstract: *Background:* In response to the United Nations Sustainable Development Goal (SDG) 3.4 (mental health target), this study aimed to explore the facilitating and barrier factors influencing doctors' willingness to participate in the Mental Health Gap Action Programme (mhGAP) training in tertiary hospitals, using the Consolidated Framework for Implementation Research (CFIR). *Methods:* Semi-structured interviews were conducted with 20 physicians from tertiary hospitals. Content analysis was performed using NVivo 11, and results were reported in accordance with the Consolidated Criteria for Reporting Qualitative Research (COREQ). *Results:* A total of 23 facilitating factors and 13 barrier factors were identified, distributed across five CFIR dimensions: innovation, outer setting, inner setting, individuals, and implementation process. Results showed that the implementation process dimension contained the most facilitating factors (n = 7), while the outer setting dimension had the most barrier factors (n = 4). *Conclusions:* The study indicates that mhGAP training has strong promotion potential in tertiary hospitals. However, targeted optimization of external support systems and implementation details is required to enable mhGAP training in tertiary medical institutions to play a leading, supportive, and radiating role in alleviating mental health resource scarcity and optimizing mental health services.

Keywords: Mental health services; Mental Health Gap Action Programme (mhGAP) training; Implementation science; Consolidated framework for implementation research (CFIR); Facilitating and barrier factors

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1. Introduction

In 2015, countries worldwide adopted United Nations Sustainable Development Goal (SDG) 3, which aims to ensure healthy lives and promote well-being for people of all ages. Within this, Target 3.4 explicitly incorporates mental health for the first time, requiring the promotion of mental health and well-being through prevention and treatment. The World Health Organization's (WHO) Mental Health Gap Action Programme (mhGAP), which trains non-mental health professionals in mental health service competencies to deliver treatment and care to patients with mental, neurological, and substance use disorders, has become an effective tool for low- and middle-income countries to address shortages and uneven professional standards in mental health service human resources [1]. mhGAP includes treatment guidelines for patients and training programs for non-mental health professionals.

Only three studies have focused on the pre-implementation phase of mhGAP, examining the facilitating and barrier factors for initiating the program. However, adequate pre-implementation research for mhGAP is necessary, as implementation plans developed based on facilitating and barrier factors are more conducive to the fidelity, acceptability, and sustainability of mhGAP implementation. Attention to the tertiary healthcare level is also critical: within the context of hierarchical medical system reform, tertiary hospitals typically play leading, supportive, and radiating roles. Thus, for the successful implementation and promotion of mhGAP, efforts should first start with tertiary hospitals, which can then gradually extend to secondary hospitals and primary care facilities, ultimately achieving full coverage. Nevertheless, research on factors influencing doctors' willingness to participate in mhGAP training within tertiary medical institutions prior to mhGAP implementation remains a gap.

This study will utilize the CFIR framework, aiming to focus on the pre-implementation phase of mhGAP and systematically explore the facilitating and barrier factors influencing doctors in tertiary medical institutions regarding their willingness to participate in mhGAP training. It seeks to provide optimization directions for the implementation and promotion of mhGAP training in countries and regions where hierarchical medical system reform is widely advancing.

2. Methods

2.1. Development of interview guide

The study designed the interview guide based on the CFIR [2]. First, an initial interview guide was drafted according to the research objectives through literature review and group discussions. Subsequently, three experts, with senior titles (associate senior or above), over 15 years of work experience, and from hospital management, department management, and senior medical leadership, respectively, were consulted to evaluate the guide. Revisions were made based on their feedback. Finally, pre-interviews were conducted with two physicians, and the guide was adjusted again based on the pre-interview results.

2.2. Data collection

Weicheng Qin (M.M.) and Wei Jiang conducted data collection using semi-structured interviews, having received professional training in qualitative interviewing. Prior to formal interviews, communication was held with respondents to explain the purpose of the interview, obtain their consent, and schedule the time and location. Face-to-face interviews were conducted in respondents' offices or rest areas, while online meeting interviews took place in their rest areas or homes, ensuring respondents were in a quiet and relaxed environment.

At the start of each interview, 10 minutes were spent using a PowerPoint presentation to introduce respondents to the Chinese-translated mhGAP guidelines and training program, including both outline and detailed content. Interviewers then used the interview guide as a framework, adjusting questioning strategies appropriately based on respondents' responses, and obtained detailed, in-depth information through questioning and active listening. Biased or leading questions were avoided during interviews to ensure the objectivity and authenticity of respondents' responses, and all interviews were audio-recorded. The study adhered to the principle of data saturation in qualitative research.

Using purposeful sampling, interviews were conducted with 20 physicians from Deyang People's Hospital. Physicians included in the study are those who have long-term engagement in frontline clinical diagnosis and treatment work with direct patient contact, specifically referring to physicians who routinely undertake direct clinical service tasks such as outpatient consultations, inpatient ward diagnosis and treatment, and patient follow-ups. The reason for selecting Deyang is that the city has established a mental health specialist alliance encompassing 31 member institutions, which is a form of medical consortium. Its construction achievements have been reported by authoritative official media in China. Deyang People's Hospital, as the leading tertiary medical institution in Deyang with the highest medical standards and greatest influence, serves as an ideal research site. Taking Deyang and Deyang People's Hospital as the research setting, this can provide a template for the implementation of mhGAP training led by tertiary medical institutions in the context of hierarchical medical system reform.

A total of 20 interviews were conducted from December 2024 to July 2025, including 13 face-to-face interviews and 7 online meeting interviews, with each interview lasting approximately 40 minutes. Interviews were concluded once data saturation was reached. Researchers adhered to the principle of confidentiality and properly stored all collected audio and text data.

2.3. Data analysis

Audio files were transcribed into text within 24 hours after each interview, and the text data were imported into NVivo11 qualitative analysis software for analysis. Weicheng Qin and Wei Jiang organized interview texts and conducted coding using NVivo11, applying content analysis to analyze interview content based on the CFIR-derived interview framework. Additionally, the two researchers cross-validated the coded content to ensure the reliability of results. Qualitative content reporting was conducted in accordance with the Consolidated criteria for Reporting Qualitative research (COREQ) guidelines.

3. Results

Table 1 presents the basic information of the respondents in this study. Among the 20 respondents, in terms of gender, 13 are male (accounting for 65%) and 7 are female (35%). For age, 8 are aged 26-30 (40%), 9 are 31–35 (45%), 1 is 36–40 (5%), and 2 are 41–45 (10%). Regarding educational qualifications, 15 have a master's degree (75%) and 5 have a doctor's degree (25%). In terms of title, 5 are beginners (25%), 13 are intermediate (65%), and 2 are advanced (10%). For professional years of service, 7 have 0–5 years (35%), 8 have 6–10 years (40%), 4 have 11–15 years (20%), and 1 has 16–20 years (5%). Overall, most respondents are male, relatively young, highly educated, with intermediate titles, and mainly have shorter-term professional experience.

Table 1. Basic information of the respondents

Characteristic	Number	Proportion
Gender		
Male	13	65%
Female	7	35%
Age		
26–30	8	40%
31–35	9	45%
36–40	1	5%
41–45	2	10%
Education		
Master's degree	15	75%
Doctoral degree	5	25%
Title		
Junior	5	25%
Intermediate	13	65%
Senior	2	10%
Professional Years		
0–5	7	35%
6–10	8	40%
11–15	4	20%
16–20	1	5%

Content analysis of the interview data based on the CFIR framework identified 23 facilitating factors and 13 barrier factors, which were specifically distributed across five dimensions: Innovation, Outer Setting, Inner Setting, Individuals,

and Implementation Process (**Table 2**). The five dimensions were numbered using uppercase English letters; facilitating factors were numbered with Arabic numerals; barrier factors were numbered with circled Arabic numerals; and each respondent was numbered using "R" (abbreviation for Respondent) followed by an Arabic number.

Table 2. Facilitating and barrier factors with exemplary textual materials

Dimension Categories	Facilitating Factors	Barrier Factors
A. Innovation	1. Clear core value *R01: "helps address patients' physical and psychological issues through a dual approach... and also avoids some doctor-patient disputes, improving patient compliance."* 2. High authority and credibility *R19: "It is developed by the WHO and supported by ample evidence-based research and practical experience."* 3. Systematic and detailed content *R17: "I find it covers a wide range of content, with detailed explanations of principles, and is divided into modules to address different scenarios/populations."* 4. Strong practicality *R01: "It provides specific operational steps. For example, when encountering relevant situations in clinical practice, one can refer to it for guidance."* 5. Integration of multiple teaching formats *R06: "It includes both centralized learning and mentorship, making it easier to understand the knowledge."*	① Rigidity in implementation: Lack of flexible adjustment space tailored to actual scenarios *R14: "Following the outline as it is should be fine, but in actual operation, adjustments still need to be made according to special circumstances."* ② Learning pathway obstacle: Excessive complexity of existing programs causes entry difficulties *R03: "It feels quite complex when first encountered. Could there be a more progressive learning plan? I think it seems quite complex initially, creating a psychological fear of difficulty... A guide for selecting key components to use would be helpful."*
B. Outer Seting	1. Strong external demand *R03:"With societal development, the public's attention to mental health is increasing".* 2. Alignment with the concept of ecological model *R10: "Nowadays, there is an emphasis on practicing medicine based on the physiological-environmental-social ecological model, and participating in mhGAP training is in line with this trend."t*	① Inadequate policy incentives: Lack of performance evaluation guidance and promotion support *R07:"Without incorporating mental health service capabilities into hospital performance evaluations, it is impossible to promote bottom-up attention, making widespread implementation difficult".* ②Cognitive differences among service recipients; low acceptance of mental health knowledge in some groups *R15: "In fourth-tier cities, for young groups, their knowledge level is relatively better. However, middle-aged and elderly people have a much lower level of acceptance of such knowledge."* ③ Lack of organizational promotion *R08:"the absence of unified organization by government systems leads to fragmented training".* ④ Insufficient professional communication *R09: "There is a lack of a communication platform, making it difficult to have opportunities to communicate with a wide range of peers on mental health topics."*

Dimension Categories	Facilitating Factors	Barrier Factors
C. Inner Setting	1. Established rapid linkage mechanism with psychiatric and psychological specialties *R02:"When encountering unresolved mental health issues in daily practice, we can quickly connect with psychiatric and psychological specialties, forming a positive cycle".* 2. Guarantee of basic resources *R05: "The venue and personnel allocation can still meet our needs for participating in this training."* 3. Long-term communication mechanism *R06: "Based on my past experience, participating in training is a good opportunity for mutual communication and learning."* 4. Driven by peer competition *R17: "The general mastery of knowledge by peers creates learning pressure on me."*	①Limited time and energy among doctors: Heavy workloads leading to difficulties in learning participation *R03:"It is common to work from 7 a.m. to 7 p.m. at the hospital—writing medical records, issuing medical orders, performing surgeries, conducting preoperative consultations, processing discharges, and engaging in these tasks from morning to evening. After returning home, already exhausted, they may feel overwhelmed when it comes to learning mental health counseling, knowledge, or related training".* ② Scarcity of training resources *R01: "Basically, I rarely participate in courses in this area."* ③ Lack of incentive mechanisms *R19: "There is a lack of incentive measures, such as financial incentives, certificates of honor, etc."*
D. Individuals	1. Dual promotion of doctors' capacity improvement, diagnostic and treatment level, and career development *R05: "For example, in communication or medication, through this training, we can obtain practical methods to guide patients, which will also be helpful for our own career development... It is more conducive to teaching students... Conducting necessary mental health assessments during diagnosis and treatment makes the diagnostic and treatment process more standardized."* 2. Enhanced professional sense of achievement *R20: "Providing better services to patients brings a sense of achievement."* 3. Adequate intrinsic motivation *R18: "I am very interested in the field of mental health."* 4. Self-empowerment of doctors *R09: "Knowledge about psychological and health issues is definitely helpful for oneself; it can make one's own mental state healthier."* 5. Expanded social support and improved ability to care for relatives *R19: "In other aspects, including for relatives and family members, it can help them get out of some difficulties."*	① low time priority *R06:*"*arrange training and learning after clinical work and academic conferences*". ② Weak learning foundation *R08: "The prior reserve of relevant theories is insufficient, and I worry about being unable to keep up with the training progress."*

Dimension Categories	Facilitating Factors	Barrier Factors
E. Implementation Process	1. Standardized, systematic yet concise materials *R16:"has both a complete set of plans and materials for fragmented learning, and video materials for spare-time learning would be better".* 2. Teaching interaction support *R15: "There will definitely be doubts, and I hope there are channels to communicate and learn with trainers."* 3. Guarantee for centralized training *R05: "I hope for full-time training; it should be more helpful for quickly improving skills."* 4. Reasonable long-term training cycle: combining short-term intensive sessions with long-term continuity *R10: "Combining short-term and long-term sessions allows us to continue learning sustainably."* 5. Integration with clinical scenarios *R07: "Since our work already involves routine communication with patients, I hope the training content can be integrated into clinical work."* 6. Guarantee of high-quality teaching staff *R09: "I hope to have lectures by experts. Such rare opportunities may also encourage us to participate in training, because usually you may not have the chance to access these teachers."* 7. Standardized training management: clear mandatory content with supporting assessments *R11: "It is necessary to set some mandatory learning chapters along with assessments; this will promote everyone to study seriously."*	①Lack of effect feedback *R12:"It's hard to persist without feedback".*

The Innovation domain (A) comprises 5 facilitating factors and 2 barrier factors. Among the facilitating factors, a clear core value (A1) stands out as a prominent feature. Physicians reported that the training *"R01- helps address patients' physical and psychological issues through a dual approach*," while also "*avoiding some doctor-patient disputes*" and "*improving patient compliance*," directly reflecting the practical value of mhGAP training for clinical practice. The primary barrier factor manifests as a learning pathway obstacle (A②). Some physicians noted, "*R03- It feels quite complex when first encountered. Could there be a more progressive learning plan... It creates a psychological fear of difficulty... A guide for selecting key components to use would be helpful*."

The Outer Setting domain (B) includes 2 facilitating factors and 4 barrier factors. Among the facilitating factors, strong external demand emerged as a significant driver (B1). "*R03-With societal development, the public's attention to mental health is increasing,*" providing a social foundation for training promotion. Barrier factors primarily reflect insufficient support systems, with inadequate policy incentives (B①) being the most prominent. Physicians commonly noted, "*R07- Without incorporating mental health service capabilities into hospital performance evaluations, it is impossible to promote bottom-up attention, making widespread implementation difficult*." Additionally, the lack of organizational promotion (B④), for example, "*R08- the absence of unified organization by government systems leads to*

fragmented training", also constitutes a notable barrier.

The Inner Setting domain (C) comprises 4 facilitating factors and 3 barrier factors. Among the facilitating factors, the established rapid linkage mechanism with psychiatric and psychological specialties (C1) provides key support for training implementation. Physicians stated, "*R02- When encountering unresolved mental health issues in daily practice, we can quickly connect with psychiatric and psychological specialties, forming a positive cycle*." Barrier factors mainly stem from operational-level pressures, with limited time and energy among doctors (C①) being the core issue. Physicians face heavy workloads: "*R03- It is common to work from 7 a.m. to 7 p.m. at the hospital—writing medical records, issuing medical orders, performing surgeries, conducting preoperative consultations, processing discharges, and engaging in these tasks from morning to evening. After returning home, already exhausted, they may feel overwhelmed when it comes to learning mental health counseling, knowledge, or related training.*"

The Individuals domain (D) includes 5 facilitating factors and 2 barrier factors. Among the facilitating factors, the dual promotion of doctors' capacity improvement and career development constitutes the core driver (D1). Physicians believe that "*R05- For example, in communication or medication, through this training, we can obtain practical methods to guide patients, which will also be helpful for our own career development... It is more conducive to teaching students... Conducting necessary mental health assessments during diagnosis and treatment makes the diagnostic and treatment process more standardized*." Barrier factors mainly manifest as constraints from practical conditions, with low time priority (D①) being the most prominent. Physicians usually "*R06- arrange training and learning after clinical work and academic conferences*"; in addition, weak learning foundation (D②) also constitutes a concern for participation.

The Implementation Process domain (E) comprises 7 facilitating factors and 1 barrier factor. Facilitating factors are concentrated in the clear demand for training design, with standardized, systematic yet concise materials becoming a common appeal. Physicians hope that the training "*R16- has both a complete set of plans and materials for fragmented learning, and video materials for spare-time learning would be better*"; meanwhile, teaching interaction support (E2), centralized training guarantee (E3), reasonable cycle (E4), integration of clinical scenarios (E5), high-quality faculty guarantee (E6), and standardized management (E7) are all key facilitating elements. The only barrier factor is the lack of effective feedback (E①). Some physicians mentioned that "*R12- It's hard to persist without feedback,*" and the absence of a feedback mechanism directly affects the sustainability of the training.

4. Discussion

Guided by the CFIR framework, this study identified facilitating and barrier factors influencing physicians' participation in mhGAP training through semi-structured interviews, resulting in 23 facilitating factors and 13 barrier factors. Overall, facilitating factors significantly outnumber barrier factors, indicating that mhGAP training has strong promotion potential within the tertiary healthcare system. However, targeted solutions to prominent issues are still needed to optimize implementation effectiveness.

The Outer Setting domain contains the largest number of barrier factors (4), with prominent issues such as inadequate policy incentives and lack of organizational promotion emerging as core bottlenecks restricting training promotion. Physicians commonly noted that "mental health service capabilities are not incorporated into performance evaluations," a phenomenon that creates an implementation gap with the policy orientation of "expanding personnel and improving capabilities" outlined in China's National Health Commission's "Mental Health Service Year." This is not unique to China; current academic research has focused on the gap between mhGAP advocacy policies and their implementation [3,4]. To address these barriers, existing studies have shown that large-scale promotion of mental health services requires multi-dimensional collaboration across "policy-resources-cognition" [5], among which policy incentives (e.g., linkage with performance evaluations, special funding support) are key to breaking the vicious cycle of "insufficient attention-low participation." Additionally, issues such as "cognitive differences among service recipients" and "inadequate professional communication" highlight the lack of external social support and peer collaboration systems, which align closely with the

widespread challenge of "fragmented external support" faced by low- and middle-income countries in promoting mhGAP.

This study has two limitations: first, the singularity of the sample source, as all 20 respondents were recruited from a single tertiary institution (Deyang People's Hospital), potentially limiting the representation of heterogeneous tertiary hospitals across regions and types. Second, the inherent subjectivity of qualitative methods, as interview data coding and interpretation depend on researchers' judgments, carries a risk of subjective bias. To mitigate these, targeted measures were taken: For sampling, Deyang People's Hospital was selected for its representativeness as the core of Deyang's Mental Health Specialist Alliance, with its alliance achievements reported by authoritative media, enhancing sample typicality. For methodology, triple quality control ensured reliability: the interview guide was designed via CFIR-based literature review and expert consultation (3 senior experts), optimized through pre-interviews, and interview texts were independently coded by two researchers with cross-validation. Results were reported strictly following COREQ guidelines to minimize subjective bias.

The findings of this study reveal that the implementation and promotion of mhGAP training should adopt the core strategy of "strengthening advantages and breaking bottlenecks." On one hand, it is necessary to consolidate the design strengths in the implementation process, further optimizing the practicality of training materials and feedback mechanisms. On the other hand, focus should be placed on building external support systems: promoting the integration of mental health service capabilities into hospital performance evaluations, and enhancing the systematicness and sustainability of training through a unified government organization. Meanwhile, to address issues such as "limited time and energy" in the Inner Setting domain and "low time priority" in the Individuals domain, training can be linked to career development (e.g., professional title promotion, teaching qualifications) through incentive mechanisms to boost physicians' willingness to participate proactively. Overall, multi-dimensional collaborative efforts are required to fully unleash the value of mhGAP training in mental health service system construction. By leveraging the leading, supporting, and radiating roles of tertiary medical institutions, it will help alleviate the shortage of mental health resources and promote the improvement of mental health service quality and efficiency at the national and even global level. This research will provide a basis for hospital administrators to formulate mhGAP training plans and for policymakers to develop policies for the implementation and promotion of mhGAP.

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