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Integrating mental health assessment in primary health care: Challenges, innovations, and economic implications in low-resource settings

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Abstract

Mental disorders are a significant contributor to global disability; however, mental health is often inadequately prioritized within primary health care systems, particularly in low- and middle-income countries (LMICs). This narrative review examines the incorporation of psychiatric assessment and care within primary health care, focusing on public mental health, health economics, and contemporary challenges in service delivery. The review highlights the significance of early detection, task-shifting, and culturally appropriate interventions in addressing prevalent mental disorders, including depression, anxiety, substance use disorders, and ADHD, based on recent studies and policy frameworks. Barriers to service access, stigma, health-seeking behaviors, and the necessity for intersectoral strategies are emphasized. Integration is associated with improved clinical outcomes, increased efficiency, and diminished long-term burdens on health systems. The review examines digital innovations and capacity-building models that are critical for sustainable reform. Finally, the conclusion emphasizes the necessity for immediate policy alignment, investment in human resources, and the development of context-specific implementation strategies to address the treatment gap and enhance equitable, person-centered mental health care at the primary level.

Keywords: Task-Shifting; Health Systems Strengthening; Mental Health Equity; Primary Care Psychiatry; Community Mental Health; Cost-Effective Interventions

1. Introduction

One of the most important public health problems of the 21st century is mental health diseases. According to the World Health Organization (WHO), one in four people throughout the world will have a mental or neurological problem at some time in their life [1]. Right now, some 450 million people have these kinds of disorders. Mental and drug use disorders make up more than 14% of the world's illness burden, and this number is expected to rise in both absolute and proportional terms, particularly in low- and middle-income countries (LMICs) where care coverage is still very low [2]. More than 75% of individuals in LMICs do not get any kind of mental health care, even though there are therapies that are based on evidence [3].

Primary health care (PHC) is a key and strategic way to bring mental health services into the fold. It allows for early identification, community-level treatments, and long-term management of common psychiatric illnesses. The PHC clinics are sometimes the first and only place people go to get health care, especially in rural and underserved regions. But PHC staff often don't have enough training in psychiatric evaluation, which leads to underdiagnosis or poor care of

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conditions including depression, psychosis, and anxiety. Stigma, cultural misunderstandings, broken service delivery, and lack of resources make these problems worse [4], [5].

Comorbid disorders and social factors that have a bigger effect on mental health outcomes make the problem worse [6]. Neurocognitive problems are quite common in people with sickle cell disease and in those who have been in car accidents, yet these problems are frequently missed in routine clinical visits [7], [8]. Also, pregnancy and postnatal depression, alcohol use by mothers, and mental health problems in teens have all been proven to be major causes of mental health problems in PHC populations [4], [9], [10]. During the COVID-19 pandemic, mental health services were significantly interrupted, revealing weaknesses in the system and leading to requests for more resilient, technologically enabled, and community-based forms of treatment [11], [12].

Mental illness has a big effect on the economy, in addition to its effects on health. Untreated mental illnesses may lead to lost productivity, more physical illness, and high rates of readmission, all of which put a pressure on health services and make society less cohesive. Health economic studies show that adding mental health services to the PHC is a cost-effective and scalable option. This is especially true with task-sharing, collaborative care, and stepped-care methods that can be adapted to different areas [1], [3].

This review looks at the present problems, new ideas, and costs of psychiatric evaluations of mental diseases in primary health care, with a focus on the demands of public mental health in low-resource settings.

2. Psychiatric Assessment in Primary Health Care

Psychiatric evaluation in the PHC is important for finding and treating mental problems quickly, although it is still not done well in many places with little resources. In the LMICs, primary care practitioners frequently do not have the specialized training they need to properly evaluate mental health, which leads to a lot of missed or wrong diagnoses of illnesses including depression, anxiety, and drug use [5], [13]. For example, depression in children and teens often shows up with physical or behavioral symptoms, which makes it harder to recognize and treat [14].

Validated screening methods made for PHC may help find more cases, however they are still not used very often. The PHQ-9, GAD-7, AUDIT, GHQ-12, and SCL-10 are all good psychometric tools for groups with low literacy and a wide range of cultures [15], [16]. However, they are not used regularly because of problems like not having enough time to consult, not having enough training for providers, and not having enough resources [3], [17].

Recent study in the area backs up these obstacles. About 38.5% of people with drug use disorders show up late to the specialized facilities [18]. This is mostly because of stigma, problems with the health system, and not having enough money. Their research shows how community health professionals and awareness campaigns may help people get care faster. Also, older people and those with other physical disorders (such post-trauma neurocognitive impairments) typically do not get enough psychiatric screening during PHC visits [19].

The WHO Mental Health Gap Action Programme (mhGAP) and PDSA-driven models have made it easier for non-specialists to find and refer people [20], [21]. Collaborative care models that connect primary care doctors with mental health professionals have also been effective, especially for older people. About 37% of those who were found to have a mental illness had suicidal thoughts, which shows how important it is to integrate these services [22].

Psychiatric assessments need to be integrated into primary care workflows in a number of ways: by regularly using short, validated instruments; by sharing tasks with trained non-specialists; and by using culturally sensitive frameworks that deal with stigma, financial constraints, and concomitant disorders. This basic ability is needed to advance toward universal mental health coverage in primary care settings.

2.1. Integration of Mental Health into Primary Health Care Systems

The incorporation of mental health services into PHC is a crucial approach to bridging the treatment gap and enhancing mental health outcomes in LMICs. Despite the significant prevalence of mental diseases, mental health care is often deprioritized in several primary health care systems [1].

The WHO has promoted the mhGAP as a fundamental strategy for enhancing mental health treatment via non-specialist providers on a global scale [20]. The mhGAP-IG, revised in 2016, provides evidence-based protocols for the evaluation and treatment of priority mental illnesses in primary healthcare environments. Research conducted in Ethiopia, Uganda,

and India has shown that the introduction of mhGAP increases detection rates, reduces stigma, and improves treatment involvement [23].

Integration efforts usually concentrate on mood and psychotic disorders in adults, but mental health issues in children and teens, notably Attention-Deficit/Hyperactivity Disorder (ADHD), are still not well represented in PHC frameworks. ADHD is one of the most common neurodevelopmental diseases in the world. Symptoms usually start in early infancy and last throughout adulthood, causing problems with school, behavior, and social interactions [24], [25]. But in many LMICs, diagnosis and treatment happen late or not at all, mostly because PHC workers are not trained, do not have the right tools, and are not aware of the problem [26].

In order to include ADHD treatment in primary health care, guidelines must be altered to fit the situation. Behavioral therapy and medications are the standard treatments, with stimulants being the first line of defense [24]. But because of safety issues, lack of availability, and stigma, many families in resource-limited areas choose omega-3 polyunsaturated fatty acids instead [25]. Studies demonstrate that adding EPA-rich supplements to the diet has helped with core ADHD symptoms in a small but steady way, with little adverse effects. This makes it a good alternative for PHC settings.

SSRIs, or selective serotonin reuptake inhibitors, like fluoxetine, are not the main therapies for ADHD, but they are often used when a person also has anxiety or depression, which is prevalent in teens [27]. It is important to keep an eye on how they are used in PHC protocols, although they may be helpful when used with supervision and psychoeducation [28].

Successful integration requires comprehensive system changes, including policy alignment, financial distribution, and training initiatives specifically designed for the circumstances of primary healthcare personnel. Task-sharing, assigning mental health tasks to nurses, clinical officers, and community health workers, has arisen as a feasible remedy to the human resource issue [3]. Furthermore, digital health platforms are progressively used to facilitate integration. Mobile mental health applications, telepsychiatry, and AI-enhanced triage instruments may enhance care provision, particularly in remote or conflict-impacted environments [29].

The incorporation of mental health into primary healthcare is not only a technological modification but a fundamental transformation that requires enduring political commitment, intersectoral cooperation, and collaborative service development with communities. Expanding these initiatives provides a means to achieve universal mental health care that is contextually relevant, culturally attuned, and internationally consistent.

2.2. Challenges in Mental Health Service Delivery in Low-Resource Settings

The provision of mental health services in low-resource environments encounters several complex problems. The journey toward equitable mental health treatment is hindered by unstable health infrastructures, entrenched stigma, and insufficient human resources.

A major concern is the acute lack of qualified mental health practitioners. WHO reports a worldwide median of nine mental health professionals per 100,000 individuals; however, in some African nations this figure is less than one per 100,000 [30]. This deficiency restricts access to prompt diagnosis and evidence-based treatments. Cultural attitudes and stigma often impede timely access to mental health treatment. Individuals may first see traditional or spiritual healers, interpreting symptoms via religious or cultural perspectives. Such delays may, in some instances, result in severe repercussions when timely medical assistance is delayed [3], [31], [32].

Infrastructure constraints and interruptions in pharmaceutical supply systems pose considerable obstacles. Despite psychiatric drugs often being part of national essential medicine lists, their reliable supply continues to be a challenge. Numerous mental health interventions need consistent monitoring and steady dosage, which may be challenging to maintain in environments with erratic medication supply and limited laboratory capabilities [33], [34]. Furthermore, sophisticated therapy methods, such pramipexole for treatment-resistant depression or dopamine dysregulation syndromes, are seldom used owing to financial constraints and inadequate clinician expertise [35], [36].

Nutritional factors and metabolic health are often neglected, despite their evident connections to mental wellness [37]. Impaired glucose metabolism has been associated with exacerbating mental symptoms; nevertheless, metabolic screening is seldom included into psychiatric therapy in low-resource settings [38]. This is troubling since certain psychiatric drugs increase the likelihood of metabolic abnormalities, further complicating therapy.

Moreover, although the innovations and community-oriented treatment models suggested in worldwide literature, mental health continues to be a low priority in budget allocations and health policy agendas in several LMICs [3]. Governments and NGOs must enhance investment in community mental health frameworks, including mental health into primary care, and use technology-assisted treatment models, particularly in areas with restricted access to specialists.

Ultimately, bridging the mental health treatment gap in resource-limited settings requires context-specific techniques, policy dedication, and a comprehensive grasp of the cultural, economic, and structural elements influencing service provision.

2.3. Strategic Directions for Improving Mental Health Services in Primary Care

Improving mental health services within primary care requires multifaceted, context-specific strategies that address structural barriers while fostering innovation, integration, and sustainability. As demonstrated in prior chapters, low-resource settings face unique challenges, limited mental health professionals, fragmented services, stigma, and underfunded health systems, all of which necessitate actionable and scalable solutions.

2.3.1. Strengthening Human Resources and Training

One of the most pressing needs is task-shifting, empowering non-specialist health workers to deliver mental health care through structured training and supervision. This model, supported by the WHO's mhGAP, has shown effectiveness in improving detection and management of common disorders in primary settings [39]. Incorporating mental health modules into the core curriculum of medical, nursing, and allied health training programs would strengthen early identification and reduce stigma among providers [3].

2.3.2. Digital Health Innovations

Digital platforms, including mobile mental health apps, telepsychiatry, and decision-support tools, present new opportunities to extend psychiatric expertise into rural areas. These tools can facilitate real-time consultation, enable follow-up care, and empower patients with psychoeducational resources [29]. Given the limitations in face-to-face access in rural areas, mobile-based support systems may help bridge service gaps.

2.3.3. Policy Development and Financing

Mental health needs to be explicitly prioritized in national health policies with allocated budgets, sustainable drug procurement systems, and integration within universal health coverage schemes. Economic modeling has shown that investing in mental health yields returns in productivity, reduced absenteeism, and lower long-term costs [40]. Leveraging models like the PDSA framework can support service delivery improvements and guide continuous quality enhancement [21], [41].

2.3.4. Community Engagement and Anti-Stigma Campaigns

Harnessing the influence of local leaders, educators, and cultural practitioners is essential in reshaping societal attitudes. Programs rooted in community-based rehabilitation (CBR) and lived experience advocacy have proven effective in fostering help-seeking behavior and ensuring continuity of care [42].

2.3.5. Research and Data Systems

Routine mental health data collection, including prevalence, service uptake, and outcomes, is essential for planning and evaluation. Strengthening research capacity through partnerships with academic institutions can generate local evidence to guide practice and policy.

3. Digital Mental Health Innovations and Telepsychiatry in LMICs

In recent years, the digital revolution of healthcare has created new possibilities to tackle enduring difficulties in mental health service delivery, especially in LMICs. Digital mental health technologies, such as telepsychiatry, mobile health (mHealth) tools, and digital therapeutic platforms, provide scalable and cost-effective ways to address the treatment gap, surmount geographical obstacles, and enhance mental health literacy among marginalized groups.

Telepsychiatry, a branch of telemedicine, has shown significant potential in enhancing access to psychiatric treatments in distant and rural areas where qualified specialists are few. The application during the COVID-19 pandemic

highlighted its efficacy, facilitating ongoing mental health treatment despite social distancing protocols [43], [44]. In nations, where the ratio of psychiatrists to patients is alarmingly low, teleconsultations may enhance expert involvement, oversight, and cooperative treatment in basic healthcare environments.

The widespread availability of mobile phones worldwide provides a favorable foundation for implementing mHealth initiatives. Applications intended for symptom monitoring, medication reminders, crisis intervention, and self-directed cognitive behavioral therapy (CBT) have been effective in improving engagement and treatment compliance [29]. Moreover, SMS-based psychoeducation and screening instruments have effectively enhanced awareness and reduced stigma in rural populations [44].

Notwithstanding these benefits, obstacles remain. Issues related to the digital divide, such as restricted internet access, unreliable energy, and inadequate digital literacy, must be resolved via inclusive infrastructure development and intuitive design. Moreover, ethical considerations pertaining to data protection, informed permission, and the suitability of digital instruments for complex psychiatric problems must influence all implementations [45].

The successful incorporation of digital technologies into primary health systems requires supporting policies, intersectoral cooperation, and ongoing financial investment. Governments and development partners must guarantee that digital solutions enhance, not supplant, human-centered care. Educating frontline health professionals in digital literacy and incorporating e-mental health technologies into national mental health plans are essential measures for sustainable implementation.

By using digital innovation while protecting patient rights and cultural sensitivity, LMICs may achieve substantial progress in democratizing access to effective mental health treatment.

4. Enhancement of Capacity and Development of Mental Health Workforce in Primary Care

The effective incorporation of mental health services into primary health care systems depends on a proficient, sufficiently supported, and contextually prepared personnel. In several LMICs, significant deficits of specialist mental health workers have compelled the implementation of task-sharing and decentralized treatment models. Scaling such approaches requires substantial investment in staff capacity development, customized training initiatives, and supporting supervisory frameworks.

Task-shifting, assigning certain mental health treatment responsibilities to non-specialist providers such as nurses, clinical officers, or community health workers, has been effectively tested in several LMICs' settings. Research indicates that with suitable training and oversight, non-specialist practitioners may proficiently provide psychological therapies for depression, anxiety, and drug use disorders [46], [47]. The WHO's mhGAP Intervention Guide has been pivotal in promoting these techniques, aiding their incorporation into current primary healthcare systems.

Nonetheless, capacity-building initiatives must extend beyond just technical training. Continuing professional development (CPD), reflective practice, and debriefing and emotional support systems are essential for mitigating burnout and enhancing resilience among frontline practitioners [48]. This is especially crucial in environments where physicians must provide treatment amidst substantial caseloads, with restricted access to expert consultations or referral opportunities.

Academic institutions, in partnership with health ministries, must provide organized training routes that include both undergraduate and in-service curriculum centered on mental health competence. Additionally, mentoring programs, peer learning groups, and regional centers of excellence may strengthen learning, foster professional identity, and improve retention [49].

Innovative alliances, including North-South cooperation and digital platforms for remote supervision and e-learning, have significant potential. Nevertheless, they must be tailored to local contexts, circumventing excessive dependence on externally imposed frameworks and guaranteeing cultural and linguistic suitability.

Proficient and engaged mental health personnel are the foundation of robust primary care systems. Capacity-building should be a fundamental element of national mental health programs, rooted on justice, sustainability, and community ownership.

5. Conclusion

Integrating mental health into PHC systems has become an important way to deal with the growing problem of mental illnesses throughout the world, especially in LMICs. This review makes it clear that we need to act quickly to make mental health a part of the bigger picture of public health and universal health care.

The evidence given throughout this article shows how important it is for PHC to find mental health problems early, do a full evaluation, and address them in a way that is culturally appropriate. Task-shifting techniques, in which non-specialist clinicians conduct front-line mental health therapies, have been shown to function, especially when they are backed up by ongoing training and supervision utilizing frameworks like the WHO's mhGAP Intervention Guide. These methods not only make it easier to get treatment, but they also assist fix the serious lack of mental health professionals in places with little resources.

There is a strong economic rationale for integration. Many studies show that getting help early for mental health problems, particularly common ones like depression, anxiety, ADHD, and drug use disorders, saves a lot of money by lowering disability rates, raising productivity, and lowering the costs of long-term care. Digital advancements like mobile health apps and telepsychiatry also provide scalable and context-sensitive solutions that can help people in underserved and rural areas get the care they need.

But to make integration work, we need more than just technological fixes. It needs ongoing investment in people, working together across professions, getting the community involved, and making sure that mental health policies are in line with larger health and development goals. To make sure that everyone gets the same results, we also need to look at the social factors that affect mental health, such as poverty, stigma, and the way people look for health care.

Including mental health in PHC is an important step in creating health systems that are person-centered, easy to get to, and long-lasting. Governments, universities, and civil society are all urged to make mental health a top priority in public health reform and to take strong action to close the treatment gap that still exists in LMICs.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare no conflict of interest related to this review article.

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