

## Bridging the Gap in Youth Psychological Well-being: A Conceptual Framework for Integrating Digital Interventions and Community Health Workers in LMICs

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### ABSTRACT

The Unprecedented rise of Mental health disorders among the Youth are contributing to a public health crisis, where most conditions emerge before 25. In Low and Middle Income Countries (LMICs) especially India, workforce shortage of healthcare professionals, limited access to services and stigma tends to broaden the treatment gap. Digital Mental Health Interventions have demonstrated small to moderate effects in reducing the symptoms of Anxiety and Depression, hence have emerged as scalable tools to enhance psychological support. However, lower sustained engagement and higher drop outs pose as a challenge in the unguided format of the intervention. The current paper employed narrative review approach to synthesize evidences from youth psychology, digital mental health and task-sharing literature. Key findings suggest that guided and blended interventions outperforms self-directed tools due to improved engagement and adherence. Likewise, Community Health workers – based task-sharing models have demonstrated effectiveness in extending mental health services in LMICs. Despite these advancements, there is a lack of integrated framework which can combine digital tools with Community Health Workers. The findings enabled the development of conceptual Hybrid Digital – CHW Model for scalable youth mental health care in LMICs. This model is based on a stepped care system, which integrates digital tools for screening, psychoeducation and self-management along with CHW led monitoring and referral pathways. The proposed framework is aimed at accessibility and scalability, providing a sustainable approach in a low resource setting for the Youth's well-being.

**Keywords:** Digital Mental Health, Community Health Workers, Youth Psychological Wellbeing, LMICs, Task-Sharing, Hybrid Care Model.

### Introduction

There is immense potential among the young adults globally, reflected in their rapid personal, social and professional development. This stage of life is often characterized by identity formation and consolidation, autonomy and responsibility. However, it is also a crucial period for the onset of mental health disorders (WHO, 2025).

Multiple factors interact to determine the mental health outcomes. Environmental determinants include poor quality of life, exposure to violence and adverse childhood experiences while biological determinants include genetic predisposition also contribute significantly to vulnerability (WHO, 2025). These factors can increase the risk of psychological distress among the youth.

Common mental disorders such as Anxiety and Depression are quite in the age group of 15 to 19 years where 5.3% suffered from Anxiety disorder while 3.4% from Depression. The Young adults (15

– 29) are particularly vulnerable to succumbing to self-harm and Suicide which has also posed as one of the leading causes of death all across the world (WHO, 2025).

According to the last National Mental Health survey conducted (2016), about 7.5% young adults between the ages 18 and 29 suffered with a mental disorder (Murthy, 2017). Likewise, the WHO has highlighted suicide as the leading cause of death among the young adults (15 – 29) in India (WHO). This brings the attention to take immediate actions to ensure youth's wellbeing within the country.

The access to mental health care remains limited due to severe workforce shortage, stigma and uneven distribution of services. With the rural population mostly underserved, the treatment gap exceeds 70% in LMICs (Patel, Saxena, Lund, Sir Thornicroft, & Baingana, 2018).

With the advent of this century, the youth is adept and skilled at using the technology. There is an unequal distribution in the use of the internet in Low income and Middle income countries, yet 70% of the young adults between the age 15 and 24 are accessing the internet (Lehtimäki, Martic, Wahl, Foster, & Schwalbe, 2021). Being online has its own advantages and its disadvantages. On one hand, internet keeps the youth connected, provides easy access to information and probable employment opportunities, on the other hand, it makes them prone to behavioral addiction such as gaming or cyber bullying.

Digital mental health interventions such as mobile applications and internet based CBT have demonstrated efficacy and effectiveness for treating anxiety (Onyeka, et al., 2024) and depression (Moshe, et al., 2021), (Venkatesan, Rahimi, Kaur, & Mosunic, 2020). However, lower levels of engagement and higher rates of drop outs poses as a limitation when delivered without human support (Lattie, et al., 2019).

Likewise, in order to address mental health workforce shortage in LMICs, task – sharing approaches involving Community Health workers have been widely adopted. The objective of mhGAP Intervention Guide is to train non-specialist workers with required skills and assessment to deliver provide intervention as frontline workers. This guide ensures a layered network of providing access to healthcare system where roles and responsibilities are well-defined. (WHO, 2019).

This highlights the pressing need to implement an integrated framework combining digital tools with community health workers as a scalable intervention for the youth Psychological well-being.

### **Review of Literature**

There is a vast literature based on Young adults well-being, digital mental health interventions and Community health workers. Mostly, the studies are heterogeneous in nature and fragmented.

### **Youth Psychological well-being in LMICs**

A systematic review conducted on adults stated that Digital Mental Health Literacy (DMHL) has found to be an effective Intervention. The follow up studies displayed sustained positive effects. The scope of the review was however limited to the Higher Income Countries and Western context, including a few studies from LMIC's such as India (Yeo, Reich, Liaw, & Chia, 2024). One research explored the notion of harboring untapped potential of the youth and people with lived experiences to provide contextual knowledge from experiences and databases to build more researches on Mental Health in LMICs (Amarasekera, Ugo, Florez, & Patalay, 2021). Similarly, a research study in Somalia highlighted the need to address the workforce shortage of healthcare professionals by employing CHWs for Mental Health Interventions (Ibrahim, Malik, & Noor, 2022).

### **Digital Interventions for Youth Psychological Well-being**

A systematic review to understand the accessibility, efficiency and effectiveness of digital interventions for the youth stated moderate improvement in the symptoms especially among the marginalized youth. While the review analyzed qualitative, quantitative and mixed method approach, it highlighted the need for high-quality researches which can be used for generalization (Piers, Williams, & Sharpe, 2022) (Lattie, et al., 2019). Majority of researches are conducted on Internet based Cognitive Behavioural Therapy especially for anxiety has demonstrated effectiveness (Onyeka, et al., 2024) (Wickersham, Barack, Cross, & Downs, 2022) along with therapist supported Internet CBT (Olthuis, Watt, Bailey, Hayden, & Stewart, 2015). Review on Positive Psychology Digital Interventions demonstrated strong evidence towards Youth's well-being (Saboor, Medina, & Marciano, 2024). Similarly, University students found digital interventions to be effective in managing anxiety, depression and stress. Digital intervention was useful in enhancing accessibility and combating stigma around mental health (Rashid, Zareen, Alvi, & Siddiqui, 2025).

### **Role of CHW Involvement in Youth Well-being**

The need to scale up task sharing approaches to address workforce shortages in LMICs has been strongly focused on the global mental health discourse. (Patel, 2021) emphasized the strategy to train non-specialist healthcare providers to deliver evidence based psychological interventions aimed to reducing the treatment gap and improving access to care. (WHO, 2019) highlighted the role of CHW in the mhGAP intervention based on task shifting model. A review stated that lay counsellors who are professionally trained in LMICs contributes significantly in the improvement of mental health across various settings (Connolly, et al., 2021). Similarly, Maanasi Mental Health project, demonstrated evidence in support of CHWs extension towards depression, suicide and schizophrenia. This project also combined a digital software e-Maanasi for the use of CHWs. They played a pivotal role in screening, adherence and referrals (Gali, et al., 2025). The researches brought attention to continuous ongoing training, peer supervision and supervised work can lead to better implementation of the CHWs task-shifting work (Petagna, Marley, Guerra, Calia, & Reid, 2022) (WHO, 2019).

### **Integration strategies and Conceptual Framework for Digital – CHW Hybrids**

The onset of COVID – 19 pandemics in LMICs necessitated the use of digital tools in the healthcare system. CHWs played a pivotal role in assessing and collecting data based on health parameters using the digital intervention. In addition, they encouraged change in behavior. A research study emphasized the effectiveness of scaling digital tools for non-specialist healthcare workers by citing 7 examples from LMICs such as India, Pakistan and Nigeria (Naslund, Shidhaye, & Patel, 2019). Yet, the implementation was faced with several challenges such as weak internet connection, poor technical support and less familiarity with the digital tools (Feroz, Khoja, & Saleem, 2021). This research shed light on integration of digital tools with CHWs along with possible obstacles. Likewise, another research emphasized context based interventions where implementation strategies included multiple stakeholders and community mobilization (Absetz, et al., 2025). Literature has displayed potential of integrated approaches such as BIT – Tech framework which integrates behavioral theory with technology design elements to guide digital interventions (Zhang, Przybylek, Braksmajer, & Yu, 2022). Although, it is not specifically designed for CHW integration, it provides a foundational structure that can be extended to hybrid models combining human facilitation with digital tools.

There is a parallel development in the existing literature in digital mental health, Community health worker – led interventions and hybrid care. However, these researches remain largely isolated and fragmented, with limited integration of structured stepped care frameworks that combine digital scalability and sustained human support. Furthermore, current research on hybrid Digital – CHW models is predominantly pilot – based and lacks validation for youth Psychological well-being in LMICs.

### **Methodology**

The current research paper employs narrative review methodology which synthesizes literature based on digital mental health, youth psychology and task sharing model. Several databases were searched and sources were identified from PubMed, The Lancet Psychiatry, Google scholar, The Cochrane Library, PMC and JMIR Mental Health. Search terms included combination of keywords such as: “Youth Psychological well-being across LMICs”, “Digital Mental Health Interventions”, “mHealth Apps”, “Community Health workers task- shifting model”, “Community Health Workers task – sharing model”, “Digital Mental Health Intervention integration with Community Health Workers for Youth Mental Health”

The papers were selected between 2005 and 2025 prioritizing systematic reviews, meta-analysis and scoping reviews. Recurrent patterns were identified across studies based on intervention effectiveness, challenges of engagement, human support mechanisms, and CHW based implementation strategies using thematic synthesis.

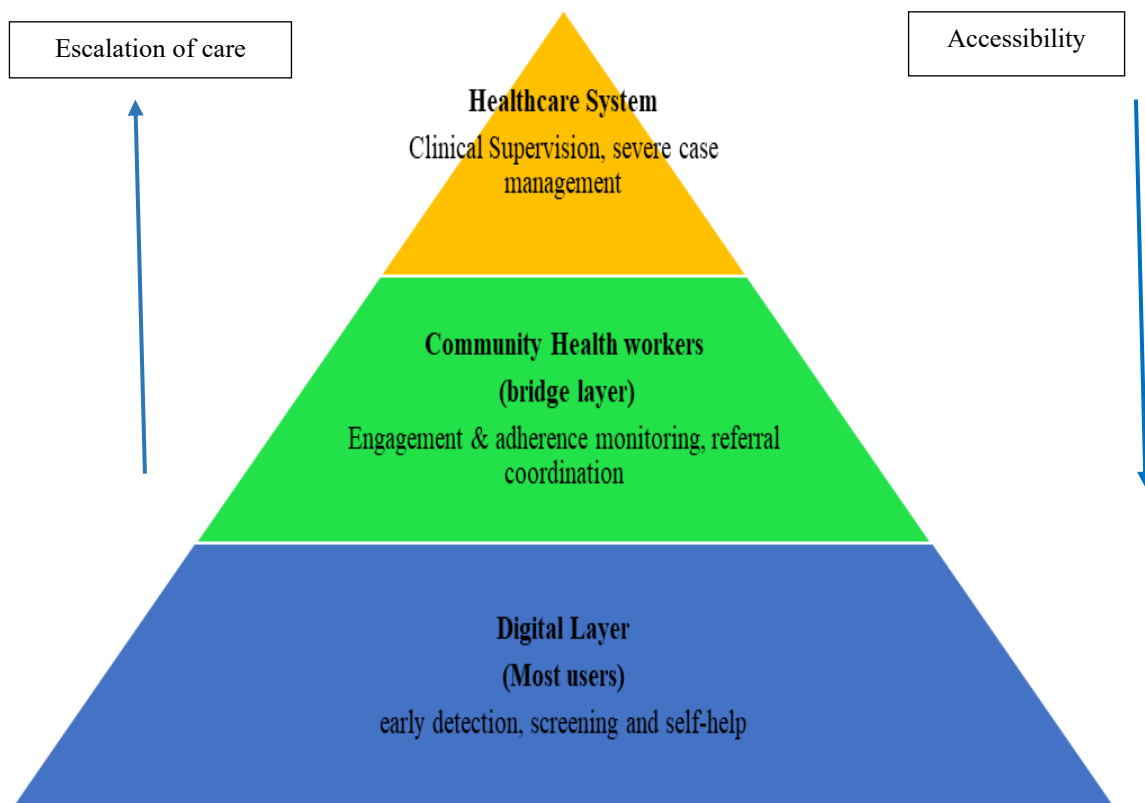
The objective of the literature review was to develop a conceptual hybrid framework combining digital tools with Community Health workers for Youth’s Psychological well-being.

### **Discussion**

The growing mental health care burden of Youth in LMICs poses as an economic and structural challenge. The present study aims to address the challenge by proposing a Hybrid Digital – Community Health worker’s framework. This model offers a structured response to the existing limitations in both standalone digital and human delivered interventions by integrating digital mental health interventions with Community Health workers led – engagement within a stepped care pathway.

Key findings from the literature review revealed moderate effectiveness in reducing the symptoms of anxiety by employing digital mental health interventions (Moshe, et al., 2021). However, there are challenges, which hinder its impact such as high drop outs, poor adherence and low engagement especially when intervention was delivered independently (Lattie, et al., 2019). Contrarily, in low resource settings, CHWs have shown effectiveness in enhancing access to mental health care (Connolly, et al., 2021), however, scalability and workload constraints are a challenge. This aligns with the broader global mental health discourse where (Patel, 2021) emphasized scaling of non-specialist health delivered psychological intervention as the key strategy to address workforce shortages in LMIC. The proposed framework attempts to bridge this gap by integrating the scalability of digital tools with relational function of CHWs.

The current research paper proposes a Hybrid Digital – Community Health Worker Model (HD – CHW). This model is based on a stepped care pathway where the initial point of contact for the youth will be the digital tools. This will be followed by Community Health worker support for sustained engagement. In cases of critical clinical cases, it will be escalated to proper clinical care. The framework is illustrated in Figure 1.



**Figure 1: Stepped care pyramid illustrating the Hybrid Digital – Community Health Workers Model for Youth Mental Health**

The Digital Layer - The major tasks involve: - Screening tools or apps for mental health, platforms or short form videos based on Psycho-education, tracking of Symptoms, Self – help Modules based on Cognitive Behavioural Therapy or Positive Psychology based Intervention.

Community Health Workers Layer - The major tasks involve: - ensuring the smooth process of on boarding and continuous engagement, monitoring adherence to the intervention, sustained emotional support and developing and facilitating Robust referral health care system.

Health Care System Layer - The major tasks involve: - Supervision of the clinical cases, specialist referral pathway and severe case management.

A structured stepped care approach is provided by the current Hybrid Digital – community Health Workers model; however, it still needs refinement to strengthen its conceptual and operational robustness. First, Clear theoretical anchoring by explicitly linking its components to established behaviour change theories and task – shifting principles would benefit the model. This explains better digital engagements and human facilitation combine contribute to youth psychological well-being. Second, the interaction between layers remain under – defined, particularly, in relation to the flow of the information between the three layers as well as incorporating feedback from CHWs to personalize digital interventions. Third, the decision rules for risk stratification and escalation limits its applicability, especially in distinguishing low, moderate and high risk user and corresponding pathways to intervention.

Therefore, to enhance the model's scalability, adaptability and relevance by incorporating structured decision pathways, feedback loops and clearly defined CHW roles with the digital ecosystem for Youth's Psychological well-being in LMICs.

The stepped care structure strengthens the framework which enables early screening digitally, monitoring by CHWs and escalation in critical cases. This design aligns with existing task – sharing principles (WHO, 2019) and highlights the potential for synergistic integration of technology and human support systems. As a conceptual model, it needs further empirical validation and field implementation to assess feasibility and contextual adaptability across diverse LMIC settings.

Several challenges are yet to be rectified such as implementation pathways, digital literacy among users and CHWs and sustainable supervision processes. Addressing this constraints, will enhance the real world applicability of the proposed framework.

The proposed Hybrid Digital – CHW (HD – CDW) framework's novelty lies in its structural integration of digital mental health tools, CHW led psychological interventions and formal health system escalation within a unified stepped care pathway specifically designed for the youth. While task – sharing models and digital interventions have been researched upon independently, this framework operationalizes their convergence with a single continuum of care which provides continuity, scalability and layered access of care to the mental health needs of the youth.

There is an alignment with the direction of global mental health policy and the presented framework which emphasizes on task-sharing and digital intervention integration in LMICs. This highlights the potential of hybrid model as a clinical and scalable intervention policy relevant strategies for youth psychological well-being.

### **Conclusion**

Due to limited availability, workforce shortages and treatment gap, Youth mental health remains a significant public health concern. This paper proposed a conceptual Hybrid Digital – community health workers (HD – CHW) model which integrates digital interventions with CHW within stepped care structure.

By synthesizing evidence from task shift approaches and digital interventions, the study highlights the potential of hybrid systems in healthcare structure to address systemic barriers. While the framework remains conceptual, it provides a foundation for future implications and implementation studies to evaluate the feasibility and real – world applicability of the model.

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