JSS 2025 3(2): 17-33

Journal of Social Sciences (JSS)
Volume 03 – Issue 02

02

BRIDGING THE DIGITAL MENTAL HEALTH DIVIDE: AI-POWERED COGNITIVE BEHAVIOR THERAPY (CBT) FOR YOUTH IN SOUTH ASIA – INSIGHTS FROM SINGAPORE'S SUCCESS

[*1]Sana, N. & [2]Dissanayake, M. P.

[1] Faculty of Graduate Studies, University of Colombo, Sri Lanka
[2] Faculty of Health Sciences, The Open University of Sri Lanka
Email: sana.mm406@gmail.com

ABSTRACT

Despite rapid AI-adoption in digital health solutions (DMH), South Asia lags, leaving millions of youth without adequate psychological support. The region faces various challenges, such as limited mental health infrastructures, stigma attached to mental health support, and digital connectivity hindering the adoption and scalability of AI-assisted Cognitive Behavior Therapy (CBT) interventions. Mental health professional shortage is alarming (e.g., Sri Lanka 0.52, Pakistan 0.4, India 0.4 per 100,000 population). Low-cost AI-driven solutions promise to revolutionize youth mental health. Singapore's AI-driven mental health solution, mindline.sg, is making digital therapy widely accessible and discussing how AI can transform youth mental health in South Asia. The objective of this study is to examine Singapore's successful AI-powered cognitive behavior therapy (CBT) and relevant digital mental health platforms, which can be adapted for South Asian youth. The focus is on understanding effectiveness, accessibility, and policy frameworks to bridge the digital mental health divide in a region. An extensive search was conducted across three databases (PubMed, ScienceDirect, Google Scholar), using Boolean operators, reference screening, and phrase search using terms "youth mental health", "digital mental health intervention", "South Asia", "AI-powered CBT", and "Singapore digital mental health". With predefined inclusion and exclusion criteria, studies (review journals, conference proceedings, research papers, policy reports) published between 2020 to 2025, in English with the focus on "Artificial Intelligence and mental health" were added. AI-powered CBT can significantly improve mental health services among South Asian youth. However, challenges such as poor digital literacy, internet inaccessibility, and societal stigma in seeking mental health support are dominating. In contrast, Singapore's approach suggests that localized, offline-capable AI solutions, culturally adaptive

interventions, and stronger policy frameworks could drive AI-driven digital mental health (DMH) transformation in South Asia.

Keywords: AI-powered CBT**,** digital mental health intervention (DMHIs), South Asia, youth mental health

[*1]***Corresponding Author:*** Sana, N. *Email:* sana.mm406@gmail.com

Introduction

Artificial intelligence revolutionizes every field, including mental healthcare (Olawade et al., 2024a). Despite rapid global advancement in AI-driven digital mental health interventions (DMHs) solutions, South Asia lags in adoption, leaving behind countless young people without adequate psychological support (Hamdani et al., 2025; Mudunna et al., 2025). Youth from South Asia are reportedly high on the prevalence rate of psychological issues associated with socio-economic disparities and lack of professional availability (Mudunna et al., 2025; United Nations, 2025; WHO, 2021). However, these challenges, such as limited mental health structures, societal stigma attached to mental health support, digitally underserved communities, and limited financial capabilities, curtail the outreach and uptake of AI-driven interventions like cognitive behavior therapy (CBT) (Hamdani et al., 2025; Sana & Dissanayake, 2025). A critical shock is the severe shortage of mental health professionals across South Asia. For instance, mental health professionals' availability as per 100,00 population is approximately 0.5 in Sri Lanka, 0.1 in Pakistan, and 0.4 in India, with similar shortages reported in Nepal and Afghanistan (WHO, 2025b). It holds a substantial treatment gap, which is approximately 0.9% for youth with mental disorders, particularly in rural and underserved areas (Hamdani et al., 2025; Mudunna et al., 2025). As the World Health Organization (2021) recent statistics show that, despite the increasing rate of psychological issues among youth, mental health workforce shortages remain critical in low-and middle-income countries (LMICs), including South Asia, with a global average of only 13 per 100,000.

In South Asia, conventional mental health services face challenges in upscaling due to limited resources, infrastructural deficit, digital divide, and stigma associated with mental health care services (Mudunna et al., 2025). Considering these constraints, low-cost AI-enabled digital platforms offer a promising pathway to extend mental health services for youth (Sana & Dissanayake, 2025). Given these constraints, low-cost AI-powered CBT and digital mental health platforms offer promising pathways for scalable, accessible, and low-cost mental health support solutions in digitally underserved areas of South Asia (Sana & Dissanayake, 2025). South Asia is home to one-fourth of the world's population and one-fifth of global psychiatric patients (Trivedi et al., 2007). To address this population's needs, with limited resources, state-supported national-level solutions can be a breakthrough in providing health care services.

Singapore's numerous successful AI-assisted mental health interventions seem suitable for an Asian context. For example, through Mindline.sg, AI-powered chatbots successfully delivered cognitive behavior therapy (CBT), i.e., *Wysa*, an emotionally intelligent chatbot that offers conversational therapy and self-care exercises; *Helpbot* and *Belle*, which assist users towards seeking appropriate mental health support as per their emotional needs; and another online-peer-support chatbot co-developed by youth representatives named *Let's Talk* (Heaukulani et al., 2024a, 2024b; Sinha et al., 2024; Weng et al., 2024a). Additionally, other than mindline.org, Singapore's mental health promotes AI-chatbots like *Pi* and *Woebot,* which deploy cognitive behavioral therapy (CBT) techniques, a platform that provides one-on-one digital therapy and counselling to Gen Z (eMHIC, 2025; Sana & Dissanayake, 2025; Weng et al., 2024b). Upscaling and replicability of such government-supported models demonstrate potential for Low-and-middle-income-countries LMICs' youth to acquire low-cost mental health services, in particular for a culturally and linguistically diverse population like South Asia. This narrative review aims to explore Singapore's AI-driven mental health platform and the components underpinning its success, critically evaluating its applicability to the South Asian context. The aim is to identify practical solutions and frameworks for South Asian youth that can help bridge the digital divide, which is considered to be the most pressing challenge of this time.

Research Problem

Despite the evolution in digital mental health solutions (DMH), the adoption of these solutions in South Asia faces a significant gap, thus depriving millions of youths from adequate psychological support when needed due to limited infrastructure, stigma, and digital divide.

Study Objectives

1) To explore how Singapore's successful AI-powered cognitive behavior therapy (CBT) and other digital mental health platforms, such as *mindline.sg*, can be adapted for South Asian youth.
2) To understand effectiveness, accessibility, and policy frameworks to bridge the digital mental health divide.
3) To identify challenges and opportunities in the adoption and execution of AI-assisted mental health solutions in low-resource South Asian settings.

Significance of the Study

The scarcity of mental health professionals in South Asia and the high mental health burden among youth necessitate scalable and low-cost AI-based solutions. The recently

successful AI-enabled mental health app, *mindline.sg*__ a case study of Singapore, can offer a successful example to enhance the accessibility and effectiveness of online Cognitive Behavioral Therapy (CBT) for South Asian young people.

Methodology

A qualitative narrative review was adopted because, unlike quantitative approaches, it allows for the synthesis of complex and diverse literature to acquire a nuanced understanding of AI-driven digital mental health solutions (DMH) and their scalability across South Asia. Across three databases (i.e., PubMed, ScienceDirect, and Google Scholar), a comprehensive search was conducted. As per the inclusion criteria, only English-language studies published between January 2020 and December 2025 were included. As shown in Table 1, search strategies using keywords (Figure 1), combined with phrase searching, Boolean operators, and citation tracking, were used to identify relevant studies, including review papers, conference proceedings, policy reports, empirical research, and mixed-method studies related to AI-driven digital mental health solutions (DMHs). Following the exclusion criteria, studies were screened as per title, abstract, and full-text relevance. Duplication was removed, considering each study represents a unique contribution to the literature. To mitigate selection bias, two independent reviewers conducted screening with consensus resolution. Only open-access studies were included, which potentially influenced the comprehensiveness. Quality assurance of included studies entailed the critical assessment during the synthesis. The narrative approach was used for thematic synthesis of various study types, which contributes to flexibility and systematic rigor.

Study Selection Criteria

Initially, a total of 1,092 articles were identified from PubMed, ScienceDirect, and Google Scholar as a result of a systematic database search with predefined keywords (Table 1) related to digital mental health services, chatbots, and youth in the South Asian context, following predefined inclusion criteria (only published literature in English from 2020 to 2025). After eliminating duplicate studies, to minimize redundancy and preliminary screening as per relevance, 802 articles were selected. This screening was narrowed down to 220 articles, which were evaluated further through eligibility criteria and study methodological, and subject relevance. Finally, 22 studies that met the inclusion criteria were included to conduct a narrative synthesis. For nuanced contextual insights on AI-assisted digital mental health solutions, Mindline.sg reports and dashboard statistics published on government portals were also included to assess the user viability and scalability potential in the South Asian region. Additionally, the latest reports of the World Health Organization (WHO) have also been incorporated to provide a recent overview of regional mental health challenges among youth. To enrich the depth and culturally nuanced understanding of AI-assisted mental health interventions in the South

Asian context, a few conference proceedings were also added.

Table 1

Key Word Search and Paper Selection Process

Database	Keywords	Initial number of papers	Number of papers after screening	Number of papers after screening	Number of papers after eligibility
PubMed	Digital mental health services AND Chatbots AND Youth	15	10	7	6
ScienceDirect	("Mental Health Services" AND "Telemedicine") AND ("Cognitive Behaviour Therapy" OR "ChatBots" OR "Mobile Apps" OR "Artificial Intelligence") AND ("Young Adult" OR "Adolescent") AND "South Asia"	17	11	8	5
Google Scholar	("Mental Health Services" AND "Telemedicine") AND ("Cognitive Behaviour Therapy" OR "ChatBots" OR "Mobile Apps" OR "Artificial Intelligence") AND ("Young Adult" OR "Adolescent") AND ("South Asia" OR "India" OR "Pakistan" OR "Sri Lanka" OR "Bangladesh" OR "Nepal" OR "Afghanistan")	1060	781	205	11
Total		1092	802	220	22

Result

Effectiveness of AI-Powered CBT for Youth

Lately, AI-enabled psychological interventions have gained substantial attention. Evidence from Singapore AI-driven chatbots' success, i.e., mindline.sg, which employs adaptive CBT techniques to deliver personalized psychological support (MOH, 2025; Phang et al., 2023; Weng et al., 2024c), significantly contributed to providing low-cost mental health care services (Figure 1).

In the case of the subclinical group, that is, individuals aged 12- 25 years who have conversational AI-chatbots and whose symptoms of depression are considerably lowered (Feng et al., 2025; Wu et al., 2023). This stance second the global discourse claiming AI interventions are a convenient, adaptable, and cost-effective support, capitalizing on the popularity of digital mental health (DMH) services among youth (Farzan et al., 2025; Olawade et al., 2024b). Despite these potential benefits and acceptability among youth, the effectiveness of interventions is less likely suitable for chronic psychological disorders, which leave room for improvement and supplementing behavioral strategies like exposure therapies; however, the effectiveness is more pronounced in patients with depression and anxiety (Li et al., 2023; Phang et al., 2023). Furthermore, the execution of such AI-assisted interventions faces unique cultural and regional opportunities and challenges when introduced in low-resource settings. In the South Asian context, these digital mental health solutions face infrastructural and cultural constraints aimed at limiting the scalability and effectiveness (Bhatt, 2025; Hamdani et al., 2025). To promote the adaptability and scalability of these digital interventions, there is a dire need to develop linguistic and culturally nuanced solutions (Alagarajah, Ceccolini, & Global, 2024). Mindline.sg is a Singaporean model, provides a footprint to upscale with its transferable core features such as personalization, anonymity, and easy accessibility (MOH, 2025; Weng et al., 2024c). Although it requires contextual adaptations to address socio-economic disparities and technological access in South Asia (Lifeline International, 2025; Subramaniam et al., 2025). Thus, diverse empirical evidence and culturally competent sensitivity must be pivotal in optimizing AI-based CBTs in the South Asian region. These findings highlight the potential of AI-based CBT interventions, yet highlight the need for tailored interventions for diverse global and regional locations (Kendall et al., 2023; WHO, 2025a).

Barriers to Adoption in South Asia

In South Asia, the adoption of AI-powered cognitive behavior therapy (CBT) is deeply entrenched with infrastructural, cultural, and policy challenges (Figure 1). Digital accessibility remained uneven in various areas of these low and middle-income countries (LMICs), which is a hindrance to the success of AI-technologies (Rahman, 2024; The

Bhutanese, 2024). Another barrier to the adoption of such tools is societal stigma around mental health, which is an obstacle to AI-CBT uptake and successful replicability in areas with low resources and a lack of awareness towards mental health issues (Bhatt, 2025; Hamdani et al., 2025). To foster acceptance in the community for AI-driven chatbots, culturally sensitive adaptation and community awareness initiatives are crucial. These challenges are further aggravated by policy fragmentation in South Asian countries. These policies and governance challenges are accelerated when combined with community concerns related to data privacy and ethics in AI-driven systems (Rahman, 2024). To address this issue, local stakeholders' engagement and public-private partnerships can reduce the complexity of AI-CBT intervention adoption in South Asia; moreover, a well-coordinated multi-sectoral strategy framework that integrates technical, cultural, and policy dimensions is crucial for effective execution in LMICs.

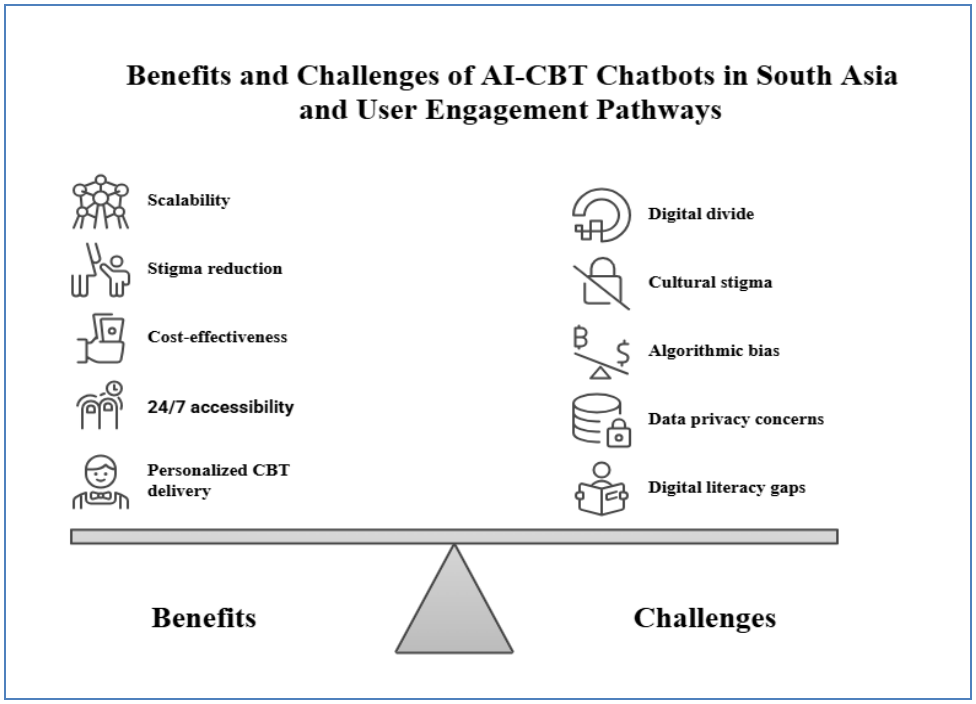

Figure 1

AI-CBT Chatbots: Benefits and Challenges

Transferability of Singapore's Model

Adopting Singapore's digital mental health model seems promising, considering the region's urgent need for a solution that upholds user anonymity and cultural adaptability, as shown in the figure below (Figure 1). The core features of Mindline.sg include: state-led governance, personalization, user-friendly, ensuring user anonymity through the integration of chatbots, e.g., Wysa for guiding digital therapies, Belle the help Bot to

direct users to suitable mental health programs with e-counselling (eC2) through quick chat (i.e., suitable for adolescents), which provides seamless integration and a one-window solution to clinical services (MOH, 2025; Phang et al., 2023; Weng et al., 2024d). These features enable Singapore's digital infrastructure for mental health services to be the most appropriate and scalable solution for LMICs.

Mindline.sg has reached phenomenal success, and it is the best model to upscale since it provides AI-CBT services that include more than 277,000 (62.02%) users with a retention rate of 10.54%, reflecting high acceptability and engagement (mindline.sg, 2025; Weng et al., 2024d). The digital mental health model of Singapore offers a core feature that can be easily adapted to LMICs, and South Asia in particular, such as the state-driven governance, the use of an AI-driven chatbot like Wysa embedded with mindline.sg, and anonymity, personalization, and seamless connectivity to clinical services (Weng et al., 2024a; Phang et al., 2023; MOHT, 2025). However, to address South Asian countries' infrastructural, linguistic, and governance challenges, a contextual redesign of mindline.sg is critical in adaptation (Alagarajah, Ceccolini, & Butler, 2024; Hamdani et al., 2025; Naeem et al., 2021). The effectiveness of this model is not solely reliant on the intervention itself, but a comprehensive government policy backing is significantly crucial to ensure the success of such interventions and that they become available to everyone. Singapore has a centralized government-coordination system; on the other hand, in South Asia, the diverse and fragmented policy frameworks and digital inequalities require the localization of such instruments prior to implementation. With these policy modifications, low-middle-income countries (LMICs) can successfully address challenges related to data privacy and lack of trust in technology (Heaukulani et al., 2024b; Rahman, 2024). As it was quite evident in several pilot projects that have successfully introduced e-mental health solutions to expand mental services, yet challenges remain in scaling and workforce capacity (Hamdani et al., 2025). Hence, the lesson learned from Singapore's success in this regard is that, beyond technology, effective and participatory government engagement, cross-sectoral collaborations, and culturally tailored interventions are also essential to make any AI-driven intervention successful.

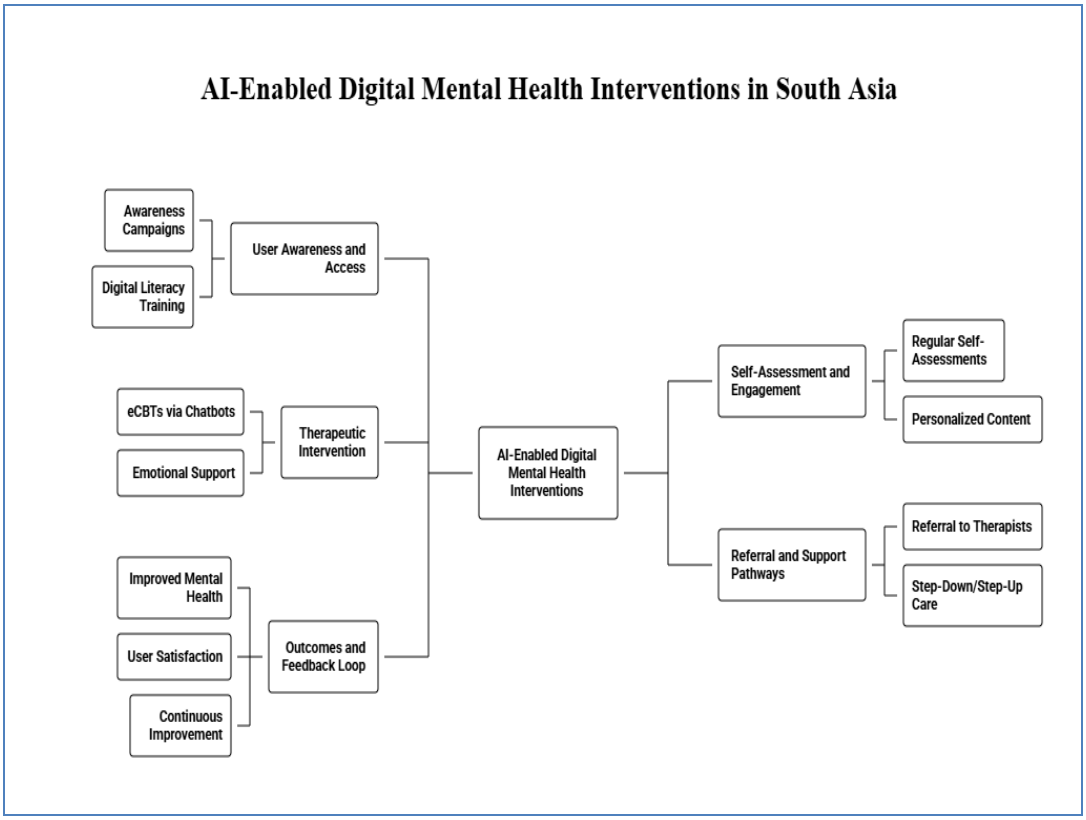

Figure 2

AI-enabled Digital Mental Health Model

Equity and Inclusion Considerations

In South Asia, digital accessibility is severely linked with gender disparities, the urban-rural divide, and socio-economic stratification (Algerafi et al., 2023; Bhatt, 2025; Maycotte et al., 2025). Despite government-led initiatives and promises to expand digital access and reduce the digital divide, marginalized and rural socio-economic groups continue to face disproportionate exclusion, which limits their access to AI-enabled platforms (Alagarajah, Ceccolini, & Butler, 2024). This inequity explains what prominent determinants influence technology adoption and culturally restricted health-seeking behaviors (Bhatt, 2025; Hamdani et al., 2025). Commonly, AI-driven or e-health services do not account for these disparities, which ultimately result in exclusion rather than reducing treatment gaps. Thus, ensuring culturally responsive, user-friendly, linguistically proficient, and tailored to local belief systems mental health interventions is a prerequisite. (Alagarajah, Ceccolini, & Butler, 2024; Hamdani et al., 2025; Lifeline International, 2025)

Framework for Understanding AI-Enabled Mental Health Interventions

To explicate how AI-enabled digital mental health interventions function within the complex socio-cultural landscape of South Asia, the theory of change (ToC) and the behavior change model (COM-B) offer a comprehensive framework (Chetty, 2018; Michie et al., 2011). Literature is scarce in explaining the framework of digital intervention pathways in low-resource and culturally diverse settings (Bhatt, 2025; Rahman, 2024). According to the theory of change perspective, change is a systematic procedure from orientation to adoption. This approach encourages people to engage and provides a step-by-step therapeutic plan (Weis & Wiese, 2022; Weissglass, 2022). This theory of change (ToC) is helpful in South Asian, where mental health services are still seen as a luxury and digital mental health solutions are only beginning to emerge. Whereas the COM-B model (Michie et al., 2011) sheds light on how individuals' capability (digital and psychological literacy), opportunity (access to culturally relevant, linguistically appropriate, digitally accessible platforms), and motivation (overcoming stigma and fostering mental health wellness) can adhere to chatbot interventions like Wysa and Hope. Since the youth from South Asia navigate unique psychosocial stressors alongside digital inequities, this model offers an in-depth behavioral insight to promote e-health services in the region (Hamdani et al., 2025; Subramaniam et al., 2025). Without considering these theoretical lenses, AI-driven interventions risk the sustainability and effectiveness in the LMIC context. Thus, employing an integrated ToC-COM-B framework bridges the empirical-theoretical divide, offering both explanatory and practical value for designing, evaluating, and scaling AI mental health tools for South Asian youths.

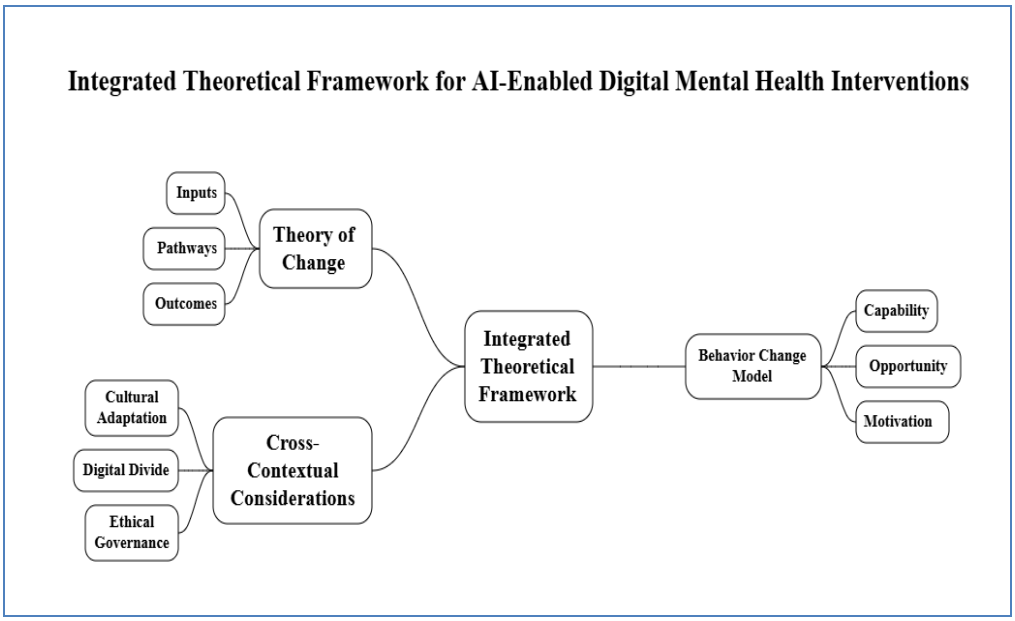

Figure 3

Theoretical and Conceptual Framework of AI-Enabled Mental Health Interventions in South Asia

Discussion

Ethical and Cultural Challenges in AI-Driven Mental Health in South Asia

Adopting the mindline. The SG platform in the South Asian context can add value to the existing mental health services, although chatbot tools such as Wysa and Hope within digital platforms can bring profound ethical and cultural complexities. Since seeking mental health services is stigmatized in this region and people have mistrust of technology, it creates a dire need to develop a robust privacy protection mechanism before executing. Yet, regulatory infrastructures in countries such as India and Bangladesh remain fragmented, exacerbating risks of data misuse and diminishing user trust (MOH, 2025; Rahman, 2024). There are certain end-user biases, ethical and privacy concerns are linked with AI-driven solutions; algorithmic biases, lack of training in datasets, and language constraints, thereby undermining diagnostic accuracy and treatment efficiency (Alagarajah, Ceccolini, & Butler, 2024; Bhatt, 2025). Addressing these equity and cultural responsiveness challenges is crucial for inclusivity in AI-driven tools development and deployment. Moreover, technology's role is to augment human

efforts rather than supplement therapeutic engagements. This recognizes the socio-cultural factors, such as stigma and societal influence, that critically mediate mental health service utilization in the region. Moreover, the technology's role must be recalibrated to augment rather than supplant human therapeutic engagement (Subramaniam et al., 2025). It is important to maintain transparency, regularly check AI systems, and protect users' privacy during integration (Rahman, 2024).

Governance and Regulatory Imperatives

For a successful deployment of such systems, the rule of thumb is to build a centralized system and ensure accountability. In Singapore, this has been advocated and practiced briefly, which helps them to build public trust (eMHIC, 2025; mindline.sg, 2025). In contrast, South Asian countries lack strong regulations, which creates risks for the ethical use and acceptance of AI in mental health care. To adapt Singapore's approach in South Asia, policies need to be carefully aligned and local capacity built to handle different political and social situations. Key pillars that can play a pivotal role for effective deployment are: a) Chatbots with Cognitive Behaviour Therapy (CBT) functions, b) an Integrated AI-driven system with human practitioners, c) personalization of AI-apps where AI adapts culturally and language norms, d) to ensure access to resource-limited population with poor internet connectivity, low-bandwidth compatibility is crucial, e) AI awareness training programs to enhance user digital literacy and to bridge digital divide (Figure 4).

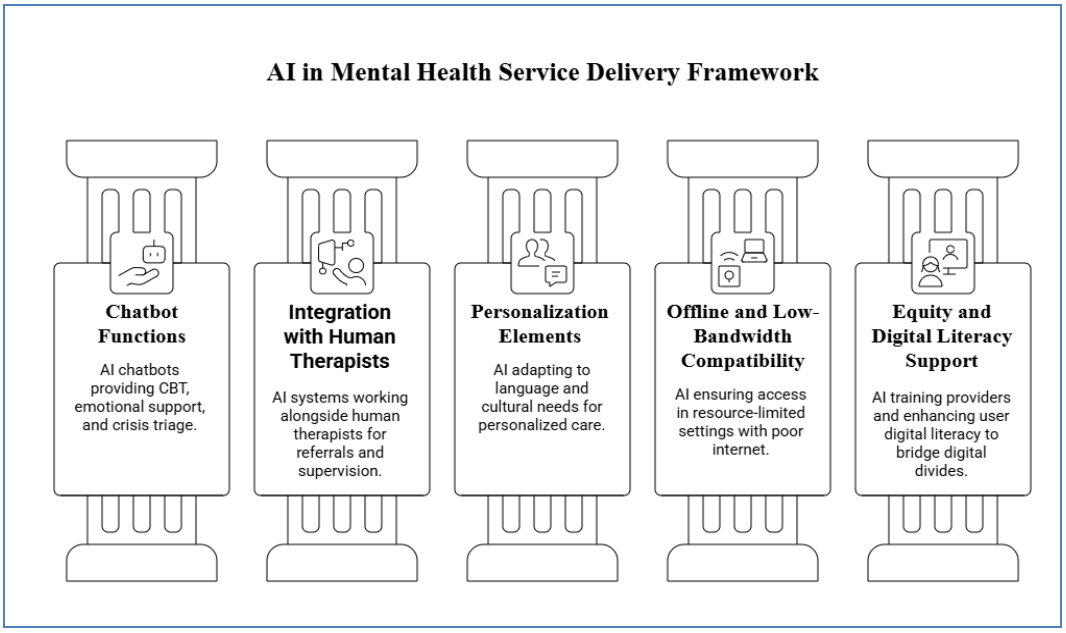

Figure 4

AI-Driven Mental Health Services Delivery Framework

Strengths and Limitations

There are certain strengths and limitations of the Mindline.sg platform through chatbots like Wysa and Hope, including scalability, personalized services, and offline compatibility, which is crucial for the LMIC context. Singapore's state-governed digital platform offers a replicable, low-cost solution for mental health services while embedding chatbots (i.e., Wysa & Hope). However, evidence from South Asia is still limited and comes from small pilot projects, often with a focus on the urban population, with a small sample, which limits its generalizability. Local population feels hesitant in adapting these technologies due to a lack of digital literacy, social inequalities, and geopolitical differences. These issues are further exacerbated by algorithmic biases and, integration of interventions into already fragmented health systems. Also, the lack of comprehensive regulatory frameworks limits ethical oversight and user trust.

Conclusion and Way Forward

AI-enabled digital mental health platforms, such as mindline.sg, have transformative potential to address the mental health care gap in low-resource settings such as South Asia. However, successful adaptation requires a careful customization to fit with local regulatory, cultural, and infrastructural realities in South Asia or LMICs. Hence, this narrative synthesis suggested, four key pillars (Figure 4) are essential in the effective deployment of AI-assisted CBT chatbots, such as integration with human practitioners, focus on language and cultural adaptation, and ensuring offline and low-bandwidth compatibility is also crucial to reach the resource-limited population with poor internet connectivity. Artificial intelligence (AI) assisted mental health solutions hold potential for resource-restricted regions like South Asia to make mental health care services accessible for all. However, the transition requires careful attention with regard to ethics, cultural norms, and governance while integrating theoretical models such as the theory of change (TOC), and the behavior change model (COM-B) to address the digital divide and youth-related issues.

References

Alagarajah, J., Ceccolini, D., & Butler, S. (2024). Digital mental health interventions for treating mental disorders in young people based in low-and middle-income countries: A systematic review of the literature. *Cambridge Prisms: Global Mental Health*, *11*, e74. https://doi.org/10.1017/GMH.2024.71

Bhatt, S. (2025). Digital mental health: Role of artificial intelligence in psychotherapy. *Annals of Neurosciences*, *32*(2), 117–127. https://doi.org/10.1177/09727531231221612

Chetty, Y. (2018). The theory of change: An overview. https://en.wikipedia.org/wiki/Theory_of_change

eMHIC. (2025). Singapore harnessing global leadership in digital mental health: A week of digital mental health collaboration from a local national perspective to APEC region to broader global context | *EMHIC*. EMHIC. https://emhicglobal.com/global-news/singapores-ascent-in-digital-mental-health/

Farzan, M., Ebrahimi, H., Pourali, M., & Sabeti, F. (2025). Artificial intelligence-powered cognitive Behavioral Therapy chatbots: A systematic review. *Iranian Journal of Psychiatry*, *20*(1), 100–108. https://doi.org/10.18502/ijps.v20i1.17395

Feng, Y., Hang, Y., Wu, W., Song, X., Xiao, X., Dong, F., & Qiao, Z. (2025). Effectiveness of AI-driven conversational agents in improving mental health among young people: Systematic review and meta-analysis. *Journal of Medical Internet Research*, *27*(1), e69639. https://doi.org/10.2196/69639

Hamdani, S. U., Huma, Z. E., Chakrabarti, B., Zafar, S. W., Gillani, A., Bagrodia, V., & Jones, A. F. (2025). Involving young people with lived experience in advancing mental health science: an exploratory qualitative study from Pakistan and India. *BMC Psychiatry*, *25*(1), 647. https://doi.org/10.1186/s12888-025-07062-1

Heaukulani, C., Phang, Y. S., Weng, J. H., Lee, J., & Morris, R. J. T. (2024a). Deploying AI methods for mental health in Singapore: From mental wellness to serious mental health conditions. *CEUR Workshop Proceedings*, *3649*, 1–11. https://doi.org/10.2139/SSRN.4935469

Kendall, P. C., Ney, J. S., Maxwell, C. A., Lehrbach, K. R., Jakubovic, R. J., McKnight, D. S., & Friedman, A. L. (2023). Adapting CBT for youth anxiety: Flexibility, within fidelity, in different settings. *Frontiers in Psychiatry*, *14*, 1067047. https://doi.org/10.3389/FPSYT.2023.1067047/BIBTEX

Li, H., Zhang, R., Lee, Y. C., Kraut, R. E., & Mohr, D. C. (2023). Systematic review and meta-analysis of AI-based conversational agents for promoting mental health and well-being. *Npj Digital Medicine*, *6*(1), 1–14. https://doi.org/10.1038/S41746-023-00979-5;SUBJMETA

Lifeline International. (2025). Policy Brief-Youth Mental Health and Suicide Prevention.

Maycotte, S., Alvarez-Risco, A., Garcia-Valenzuela, E., & Kuljis, M. (2025). Digital capabilities in emerging market firms: Construct development, scale validation, and implications for SMEs. *Journal of Open Innovation: Technology, Market, and Complexity*, *11*(2), 100513. https://doi.org/10.1016/j.joitmc.2025.100513

Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science*, *6*(1), 1–12. https://doi.org/10.1186/1748-5908-6-42/TABLES/3
mindline.sg. (2025). mindline.sg | Free mental health resources & mindfulness tools in Singapore. https://mindline.sg/

MOH. (2025). Ministry of Health (MOH) office for healthcare transformation, Singapore. https://www.moht.com.sg/our-programmes/mindline-sg

Mudunna, C., Weerasinghe, M., Tran, T., Antoniades, J., Romero, L., Chandradasa, M., & Fisher, J. (2025). Nature, prevalence and determinants of mental health problems experienced by adolescents in south Asia: a systematic review. *The Lancet Regional Health. Southeast Asia*, *33*. https://doi.org/10.1016/J.LANSEA.2025.100532

Naeem, F., Latif, M., Mukhtar, F., Kim, Y. R., Li, W., Butt, M. G., Kumar, N., & Ng, R. (2021). Transcultural adaptation of cognitive behavioral therapy (CBT) in Asia. *Asia-Pacific Psychiatry*, *13*(1). https://doi.org/10.1111/appy.12442
Olawade, D. B., Wada, O. Z., Odetayo, A., David-Olawade, A. C., Asaolu, F., & Eberhardt, J. (2024a). Enhancing mental health with Artificial Intelligence: Current trends and future prospects. *Journal of Medicine, Surgery, and Public Health*, *3*, 100099. https://doi.org/10.1016/J.GLMEDI.2024.100099

Phang, Y. S., Heaukulani, C., Martanto, W., Morris, R., Mian Tong, M., & Ho, R. (2023). Perceptions of a Digital Mental Health Platform Among Participants With Depressive Disorder, Anxiety Disorder, and Other Clinically Diagnosed Mental Disorders in Singapore: Usability and Acceptability Study. *JMIR Human Factors*, *10*, e42167. https://doi.org/10.2196/42167

Rahman, A. (2024). Editorial: Equity/inequality, diversity and inclusion in child and adolescent mental health – a perspective from the South Asian region. *Child and Adolescent Mental Health*, *29*(2), 197–199. https://doi.org/10.1111/camh.12702

Sana, N., & Dissanayake, M. P. (2025). AI-Driven health interventions: Enhancing psychological Well-being in rural settings of South Asia: A narrative review. Research Conference of the Faculty of Health Sciences. OUSL Research Home

Sinha, C., Dinesh, D., Heaukulani, C., & Phang, Y. S. (2024). Examining a brief web and longitudinal app-based intervention [Wysa] for mental health support in Singapore during the COVID-19 pandemic: mixed-methods retrospective observational study. *Frontiers in Digital Health*, *6*, 1443598. https://doi.org/10.3389/FDGTH.2024.1443598/BIBTEX

Subramaniam, M., Vaingankar, J. A., Tan, B., Abdin, E., Chang, S., Tan, Y. W. B., Samari, E., Archana, S., Chua, Y. C., Lee, J. K., Tang, C., Lee, Y. P., Chong, S. A., & Verma, S. K. (2025). Examining psychological distress among youth in Singapore: Insights from the national youth mental health study. *Asian Journal of Psychiatry*, *105*, 104405. https://doi.org/10.1016/j.ajp.2025.104405

The Bhutanese. (2024). *How AI can transform Bhutan's healthcare – The Bhutanese*. https://thebhutanese.bt/how-ai-can-transform-bhutans-healthcare/

Trivedi, J. K., Goel, D., Kallivayalil, R. A., Isaac, M., Shrestha, D. M., & Gambheera, H. C. (2007). Regional cooperation in South Asia in the field of mental health. *World Psychiatry*, *6*(1), 57. https://pmc.ncbi.nlm.nih.gov/articles/PMC1805715/

United Nations. (2025). *WHO sounds alarm as mental health conditions soar past one billion worldwide | UN News*. https://news.un.org/en/story/2025/09/1165759
Weis, P. P., & Wiese, E. (2022). Know Your Cognitive Environment! Mental Models as Crucial Determinant of Offloading Preferences. *Human Factors*, *64*(3), 499–513. https://doi.org/10.1177/0018720820956861

Weissglass, D. E. (2022). Contextual bias, the democratization of healthcare, and medical artificial intelligence in low-and middle-income countries. *Wiley Online Library*, *36*(2), 201–209. https://doi.org/10.1111/BIOE.12927

Weng, J. H., Hu, Y., Heaukulani, C., Tan, C., Chang, J. K., Phang, Y. S., Rajendram, P., Tan, W. M., Loke, W. C., & Morris, R. J. T. (2024a). Mental Wellness Self-Care in Singapore with Mindline.sg: A Tutorial on the Development of a Digital Mental Health Platform for Behavior Change. *Journal of Medical Internet Research*, *26*, e44443. https://doi.org/10.2196/44443

WHO. (2021). Global strategy on digital health 2020-2025. Geneva: World Health Organization; 2021. Licence: CC BY-NC-SA 3.0 IGO. In the WHO. World Health Organization. http//apps.who.int/iris

WHO. (2025a). *WHO South-East Asia launches mental health dashboard to accelerate and strengthen evidence-based action*. https://www.who.int/southeastasia/news/detail/24-

07-2025-who-south-east-asia-launches-mental-health-dashboard-to-accelerate-and-strengthen-evidence-based-action

WHO. (2025b). *Over a billion people living with mental health conditions – services require urgent scale-up*. https://www.who.int/news/item/02-09-2025-over-a-billion-people-living-with-mental-health-conditions-services-require-urgent-scale-up

Wu, Y., Fenfen, E., Wang, Y., Xu, M., Liu, S., Zhou, L., Song, G., Shang, X., Yang, C., Yang, K., & Li, X. (2023). Efficacy of internet-based cognitive-behavioral therapy for depression in adolescents: A systematic review and meta-analysis. *Internet Interventions*, *34*, 100673. https://doi.org/10.1016/J.INVENT.2023.100673