Implementing Mobile Health Interventions in Low- and Middle-Income Countries' Health Systems for Improving Maternal Health: Exploratory Case Studies

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Abstract

Background: This study explores the implementation of The Company (TC), a mHealth symptom checker (SC) app, to improve maternal health (MH) in low- and middle-income countries (LMICs), focused on South Africa and India. It examines TC's potential contributions to MH and universal health coverage (UHC), describes TC users and their symptom assessments, and identifies implementation factors and recommendations.

Methodology: A qualitative, case-study approach was used, involving a literature review of maternal mHealth implementations, descriptive analysis of TC user assessments, and key informant interviews. Analysis employed the Consolidated Framework for Implementation Research (CFIR) tool to categorize implementation factors and recommendations.

Results: The findings highlight solutions like TC can enhance MH and UHC by improving the quality and efficiency of maternity services and promoting behavior change. TC users in both LMICs showed similarities and differences. A similarity was that users were often young to middle aged adults, living in urban areas. Numerous interconnected implementation factors were identified across all 5 CFIR domains: South Africa had 37 factors (15 barriers; 22 facilitators), whilst India had 14 factors (six barriers; eight facilitators). Common factors in both LMICs were primarily related to the intervention and outer setting domains. Factors from other domains were also highly influential, such as the users' beliefs and behaviors. Seventeen recommendation themes emerged, emphasizing user engagement and awareness campaigns, monitoring and evaluation, intervention adaptability to local contexts, multi-sectoral partnerships, particularly with local organizations, and diverse financing.

Conclusion: This study demonstrates the importance of the intervention characteristics and outer setting in implementation. Despite the similarities, each LMIC had its unique characteristics and TC users, which necessitates country-specific mHealth integration strategies for sustainable deployment. Future research should examine additional SC digital maternal interventions in LMICs and study other implementation aspects, including the inner setting, non-user stakeholder characteristics, socio-cultural influences.

Recent Publications

1. Labrique AB, Wadhwani C, Williams KA, et al. Best practices in scaling digital health in low and middle income countries. *Glob Health*. 2018;14(1):103.

2. Evans J, Bhatt S, Sharma R. The path to scale: navigating design, policy, and infrastructure. In: Baulch E, Watkins J, Tariq A, eds. *MHealth Innovation in Asia: Grassroots Challenges and Practical Interventions.* Springer; 2018:31-48.

3. Aranda-Jan CB, Mohutsiwa-Dibe N, Loukanova S. Systematic review on what works, what does not work and why of implementation of mobile health (mHealth) projects in Africa. *BMC Public Health*. 2014;14(1):188.

4. Sondaal SFV, Browne JL, Amoakoh-Coleman M, et al. Assessing the effect of mHealth interventions in improving maternal and neonatal care in low- and middle-income countries: a systematic review. *PLoS One*. 2016;11(5).

5. McCool J, Dobson R, Muinga N, et al. Factors influencing the sustainability of digital health interventions in low-resource settings: lessons from five countries. *J Glob Health*. 2020;10(2).

Biography



Dr. V Kundi is a medical doctor who has transitioned into the fields of public health and digital health. She focuses on leveraging digital solutions to enhance healthcare accessibility, especially in underserved regions of the global south. She adapts digital platforms to cater to the diverse needs of health system stakeholders. In addition to implementation, she monitors the real-world impact of these interventions. Her research interests lie in promoting equitable healthcare and prevention, particularly for vulnerable communities, while also strengthening healthcare through innovation.

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