

A Review on Evaluating the Effectiveness of Mobile Health Interventions Surrounding an Underserved and Stigmatized Population

GO Kamburugamuwa^{1#} and RPS Kathriarachchi²

¹Department of Computer Science, Faculty of Computing, General Sir John Kotelawala Defence University

²Department of Information Technology, Faculty of Computing, General Sir John Kotelawala Defence University

#39-bcs-0009@kdu.ac.lk

Abstract

Mobile Health (mHealth) applications have emerged as viable solutions for managing depression, offering scalable and accessible mental health care. These tools leverage technology to address limitations in traditional mental health services, providing cost-effective and accessible interventions. Despite their promise, significant gaps remain in the systematic evaluation of their effectiveness, particularly for underserved populations and individuals facing stigma or social dysfunction. This systematic review, conducted using the PRISMA framework, analyzed 40 studies published between 2010 and 2024. The review highlights the diversity of mHealth approaches, including chatbots, cognitive-behavioral therapy (CBT) modules, mood tracking, and gamification features. While these tools have demonstrated potential, many studies rely heavily on user engagement metrics and subjective feedback, lacking standardized clinical outcome measures to assess long-term improvements in depression symptoms. The findings indicate that mHealth tools have increased accessibility to mental health resources by 68%, particularly for vulnerable groups such as individuals from low-resource settings and those experiencing stigma or social challenges. However, the therapeutic impact and overall effectiveness of these interventions remain unclear due to the absence of validated clinical assessments. Future research should focus on integrating standardized measures to evaluate the clinical efficacy of mHealth applications and their role in addressing mental health disparities.

Keywords: *Mobile health for depression, Stigmatized population, Mobile health applications, Underserved population*