Letter to Editor

The Promise and Next Steps for mHealth in Thalassemia Management

Dear Editor

The randomized clinical trial by Mehrabadi and colleagues[1] addressed a critical public health challenge: nonadherence to complex, lifelong treatment regimens among patients with beta-thalassemia major (BTM). I commend the authors for undertaking this rigorous evaluation of a digital intervention, particularly the ThalaME app, which is culturally and linguistically tailored for Persian-speaking patients and thus addresses a significant barrier to accessibility.

The study's core finding—that an 8-week intervention significantly improved both medication adherence (MMAS-8 scores) and overall treatment management adherence (CDTAQ scores) compared with standard care—is highly promising. This result reinforces the growing body of evidence supporting mobile health (mHealth) applications as scalable and cost-effective tools for chronic disease management. For patients with BTM, who face a high pill burden and complex chelation schedules essential for preventing life-threatening iron overload complications, the successful deployment of a user-friendly reminder system holds considerable potential for improving clinical outcomes and overall quality of life.[2] Moreover, the authors' success in developing a Persian-language application represents an important public health achievement, reflecting a commitment to digital health equity that respects cultural and linguistic diversity.

However, translating these encouraging short-term findings into sustainable public health policy requires careful consideration of several factors. Firstly, the intervention duration of 8 weeks is relatively short. Adherence to chronic disease regimens represents a long-term behavioral challenge, and adherence rates often decline once the novelty or active support associated with an intervention diminishes.[3] Future research should therefore prioritize longitudinal studies (ideally lasting 6 to 12 months or longer) to evaluate the sustained effectiveness of the ThalaME app in maintaining high adherence levels and, critically, to assess its long-term impact on objective clinical outcomes, such as serum ferritin levels.

Secondly, the study relied on self-reported adherence measures (MMAS-8 and CDTAQ). Although these instruments are validated, they are susceptible to social desirability bias, whereby patients may overreport adherence, potentially inflating the observed effect size.[4] To strengthen confidence in public health recommendations, future studies should incorporate objective adherence measures, such as electronic pill monitoring, pharmacy refill data, or laboratory biomarkers, to corroborate self-reported data.

Thirdly, while the study appropriately focused on adults, nonadherence is equally, if not more, prevalent among adolescents and younger patients transitioning to self-management. Evaluating the effectiveness and usability of this intervention in younger age groups represents an important next step in reducing the lifetime burden of disease-related complications.

Finally, the authors noted that the app was developed as an offline solution and primarily for the Android platform, which raised questions regarding scalability and technological limitations in a rapidly evolving digital landscape. Public health initiatives aimed at widespread adoption should ensure cross-platform compatibility and integration with national health information systems to facilitate seamless data exchange and enable clinician-supported patient monitoring.

In conclusion, Mehrabadi and others provided compelling evidence that a culturally tailored mHealth reminder application significantly enhances treatment adherence among adults with BTM.[1] This study serves as a strong foundation for the development of scalable strategies to address nonadherence in high-burden chronic diseases. To fully inform public health policy and resource allocation, future research should focus on validating long-term effectiveness, incorporating objective adherence measures, and

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ensuring equitable accessibility across diverse patient age groups and technological platforms. Such evidence-based adoption of mHealth intervention is essential for reducing morbidity and healthcare costs associated with nonadherence in BTM.

Statement from IJMS

The response letter from Dr. Mehrabadi and colleagues will be published whenever received by the Journal.

Declaration of AI

In preparing this “Letter to the Editor”, we did not use any Artificial Intelligence (AI)-assisted technologies such as Large Language Models (LLMs), chatbots, or image creators.

Conflict of Interest: None declared.

Keywords ● Thalassemia ● Treatment adherence ● mHealth ● Digital health equity ● Public health

Haewon Byeon, DrSc, PhD

Worker’s Care and Digital Health Lab, Korea University of Technology and Education (KOREA TECH), Cheonan 31253, South Korea

Correspondence:
Haewon Byeon, DrSc, PhD;
Worker’s Care and Digital Health Lab, Korea University of Technology and Education (KOREA TECH), Cheonan 31253, South Korea
Tel: +82 10 74046969
Email: bhwpuma@naver.com
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