Barriers and facilitators for the sustainability of digital health interventions in low and middle-income countries:

A systematic review

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Background: Digital health interventions (DHIs) have increased exponentially all over the world. Furthermore, the interest in the sustainability of digital health interventions is growing significantly. However, a systematic synthesis of digital health intervention sustainability challenges is lacking. This systematic review aimed to identify the barriers and facilitators for the sustainability of digital health intervention in low and middle-income countries.

Methods: Three electronic databases (PubMed, Embase and Web of Science) were searched. Two independent reviewers selected eligible publications based on inclusion and exclusion criteria. Data were extracted and quality assessed by four team members. Qualitative, quantitative or mixed studies conducted in low and middle-income countries and published from January 2000 to May 2022 were included.

Results: The sustainability of digital health interventions is very complex and multidimensional. Successful sustainability of digital health interventions depends on interdependent complex factors that influence the implementation and scale-up level in the short, middle and long term. Barriers identified among others are associated with infrastructure, equipment, internet, electricity and the DHIs. As for the facilitators, they are more focused on the strong commitment and involvement of relevant stakeholders: Government, institutional, sectoral, stakeholders' support, collaborative networks with implementing partners, improved satisfaction, convenience, privacy, confidentiality and trust in clients, experience and confidence in using the system, motivation and competence of staff. All stakeholders play an essential role in the process of sustainability. Digital technology can have long term impacts on health workers, patients, and the health system, by improving data management for decision-making, the

standard of healthcare service delivery and boosting attendance at health facilities and using services. Therefore, management changes with effective monitoring and evaluation before, during, and after DHIs are essential. Conclusion: The sustainability of digital health interventions is crucial to maintain good quality healthcare, especially in low and middle-income countries. Considering potential barriers and facilitators for the sustainability of digital health interventions should inform all stakeholders, from their planning until their scaling up. Besides, it would be appropriate at the health facilities level to consolidate facilitators and efficiently manage barriers with the participation of all stakeholders.

KEYWORDS

health systems, eHealth, mHealth, sustainability, barriers, facilitators, low and middle-income countries, systematic review

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