



A Systematic Review of Digital Health Innovations in Urban South African Medicine: An African Perspective,

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Abstract

The digitalisation of medicine is a global phenomenon, but its application within specific African contexts demands focused analysis. Urban South Africa, characterised by distinct healthcare challenges and infrastructure, provides a critical setting for examining digital health innovations. This systematic review aimed to synthesise evidence on digital health innovations within urban South African medical practice. Its objectives were to catalogue the types of technologies employed, evaluate reported outcomes, and identify barriers and facilitators to implementation from an African perspective. A systematic literature review was conducted following established guidelines. Multiple academic databases were searched for peer-reviewed studies. Predefined inclusion and exclusion criteria were applied to select studies of digital interventions in urban South African clinical settings. Study quality was appraised, and data were extracted and analysed thematically. The review identified a predominant focus on mobile health (mHealth) interventions, notably using SMS for patient communication and adherence support. A consistent theme was the necessity for solutions designed around local constraints, such as data costs and variable device access. Reported benefits included improved patient engagement, but evidence for sustained clinical outcomes was limited. Digital health innovations in urban South Africa, while promising, are predominantly mHealth-focused. Their development and scale are frequently constrained by contextual socio-economic factors more than technical issues. Successful implementation depends on locally adapted, human-centred design. Future work should prioritise co-design with end-users and healthcare workers. More robust, longitudinal studies are required to assess clinical efficacy and cost-effectiveness. Policymakers should foster enabling regulatory frameworks and support relevant infrastructure development. digital health, mHealth, telemedicine, South Africa, urban health, systematic review, implementation science This review consolidates the

African, specifically South African, evidence on digital health in urban settings, offering a synthesised perspective on current applications, contextual challenges, and future priorities for research and practice.

Keywords: *Digital health, Telemedicine, Urban health, Sub-Saharan Africa, Systematic review, eHealth, Healthcare access*



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