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Impact of a Digital Adherence Technology on Tuberculosis Treatment Outcomes in an Urban African Setting: A Brief Report from Mozambique

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Abstract

Tuberculosis (TB) remains a major public health challenge in many African settings, with treatment adherence being a critical determinant of successful outcomes. Digital adherence technologies, such as 99DOTS, offer a potential low-cost solution, but evidence of their effectiveness in real-world, high-density urban environments is limited. This brief report aimed to assess the effect of implementing the 99DOTS digital adherence platform on treatment outcomes for drug-sensitive pulmonary TB patients within an urban African setting. A retrospective cohort analysis was conducted using routine programme data from a public health clinic in an urban Mozambican setting. Patients initiating standard TB therapy were enrolled, with one cohort using the 99DOTS platform and a historical control cohort receiving standard care. Primary outcomes were treatment success and loss to follow-up rates. Patients using the 99DOTS platform demonstrated a higher treatment success rate (87%) compared to the control group (78%). The proportion of patients lost to follow-up was lower in the intervention group (7% versus 15%). The integration of the 99DOTS digital adherence technology was associated with improved TB treatment outcomes in this urban setting, suggesting it is a feasible intervention to support care programmes. Consideration should be given to wider implementation of low-cost digital adherence tools within national TB programmes, accompanied by robust monitoring and evaluation. Further operational research is needed to understand barriers to uptake and long-term sustainability. tuberculosis, treatment adherence, digital health, mHealth, Mozambique, low-income setting This report provides practical evidence from a routine programme setting on the utility of a specific

digital health tool for TB management, contributing to the growing literature on mHealth applications in African public health systems.

Keywords: *Tuberculosis, Treatment Adherence, Digital Health Technology, Sub-Saharan Africa, Directly Observed Therapy*

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