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A Theoretical Framework for Analysing the Adoption of Malaria Rapid Diagnostic Tests by Private Drug Retailers in Ghana's Ashanti Region

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| Abstract

Malaria remains a significant public health burden in Ghana. Private drug retailers are a first point of care for suspected malaria but have historically relied on presumptive diagnosis. Introducing malaria rapid diagnostic tests (RDTs) into this sector could improve diagnostic accuracy and rationalise antimalarial use. The factors influencing retailers' adoption are not well understood within a cohesive theoretical framework. This article aims to develop a theoretical framework for analysing the determinants of malaria RDT adoption by private drug retailers in Ghana's Ashanti Region. It seeks to integrate constructs from established theories of technology adoption and health behaviour to guide future research and intervention design. The framework was developed through a narrative synthesis of literature on technology adoption in healthcare, drawing on theories such as the Diffusion of Innovations and the Theoretical Domains Framework. These were contextualised within the socio-economic and regulatory environment of private drug retail in a low-resource setting. Key insights: The framework posits that adoption is influenced by a complex interplay of multi-level factors. A central insight is that perceived relative advantage, encompassing economic benefit and professional credibility, is a more potent driver for retailers than clinical accuracy alone. The framework also highlights the critical moderating role of supply chain reliability and regulatory enforcement. This theoretical framework provides a structured,

multi-level lens for understanding RDT adoption. It moves beyond a focus on knowledge deficits to encompass the broader economic, social, and systemic determinants of behaviour change in the private retail sector. Future empirical research should apply this framework to identify context-specific barriers and enablers. Interventions should address retailers' composite motivations, including financial incentives, trust-building, and systemic support. malaria, rapid diagnostic tests, private sector, drug retailers, technology adoption, theoretical framework, Ghana. This article provides a novel theoretical framework for analysing the adoption of malaria RDTs by private drug retailers, synthesising relevant behavioural and technological theories into a context-specific model for a low-resource setting.
