



# A Theoretical Framework for Analysing PrEP Uptake and Adherence through Community-Based Peer Networks among Female Sex Workers in Mombasa

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## Abstract

Female sex workers in sub-Saharan Africa bear a disproportionate burden of HIV. Pre-exposure prophylaxis is highly effective, but its public health impact is constrained by low uptake and adherence. Community-based peer networks present a promising delivery model, yet a dedicated theoretical framework to analyse their operative mechanisms within this context is absent. This article aims to develop a theoretical framework for analysing the determinants of PrEP uptake and adherence when delivered through community-based peer networks among female sex workers in Mombasa, Kenya. It seeks to integrate and adapt established behavioural theories to this specific socio-structural environment. A desk-based, conceptual methodology was employed. Relevant sociological and health behaviour theories, including Social Capital Theory and the Social-Ecological Model, were reviewed, synthesised, and critically adapted to the documented realities of female sex workers in Mombasa. Key insights: The proposed framework posits that peer network efficacy extends beyond information dissemination. A central insight is that perceived collective efficacy within the network—the shared belief in the group’s capability to support PrEP use—acts as a critical mediator for individual adherence. The framework delineates how structural, network, interpersonal, and individual-level factors interact. The framework provides a structured, multi-level lens for understanding PrEP engagement via peer networks. It incorporates the influence of community dynamics and social capital, moving beyond individual-level explanations to offer a more comprehensive tool for programme design and evaluation. Researchers should apply and empirically test this framework in Mombasa and comparable settings. Programme planners should use it to design interventions that intentionally strengthen identified constructs, such as fostering collective efficacy and addressing network-level barriers. HIV prevention, pre-exposure prophylaxis, sex workers, peer group, community health workers, theoretical model, Kenya. This

work provides a novel theoretical framework to guide the analysis and design of community-based peer network interventions for PrEP delivery among female sex workers in similar urban African contexts.

**Keywords:** *HIV prevention, Pre-exposure prophylaxis, Female sex workers, Community-based interventions, Sub-Saharan Africa, Implementation science, Social network theory*

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