A CBPR Approach to Exploring Transportation Barriers and Neighborhood Dynamics in HIV Care in Kenya: Protocol

Kimaru, L.J¹, Ngaruiya C.¹, Mugo C.², Madhivanan P.³

¹Stanford University, Department of Emergency Medicine, Palo Alto, California; ²Kenyatta National Hospital, Kenya Research and Training Center, Nairobi, Kenya; ³University of Arizona, Department of Health Promotion Sciences, Tucson, Arizona

Description: Essential

facilities and services

Examples: Schools,

Disorder: Deteriorated

buildings, insufficient

infrastructure, lack of

Conditions impacting

pollution, unsafe public

Cleanliness, noise

clinics, shops,

transport, etc.

transport

the area

Examples:

levels, safety

Disorder: Litter,

school and clinic

BACKGROUND

HIV in Kenya: Kenya has a high burden of HIV, with prevalence rates exceeding global averages. Ensuring that people living with HIV (PLHIV) achieve viral suppression is essential for improving individual health outcomes and reducing transmission rates. Achieving viral suppression depends on consistent adherence to antiretroviral therapy (ART).

Neighborhoods: Neighborhoods play a significant role in shaping health behaviors. Research shows that individuals in neighborhoods perceived as disorderly often experience lower self-efficacy for ART adherence.

Transportation: Reliable transportation is a key determinant of healthcare access. Transportation barriers such as long travel distances, high costs, poor infrastructure, and safety concerns affect access to HIV care. Research has shown that PLHIV who face transportation barriers are less likely to remain engaged in care.

Knowledge Gap: Despite the importance of neighborhood dynamics in shaping health behaviors, this area is under-explored in low- and middle-income countries, especially regarding transportation barriers.

Research Question: How do transportation challenges and neighborhood dynamics impact HIV care among PLHIV?

WHAT IS A NEIGHBORHOOD?



Physical Features

Description: The tangible aspects of a neighborhood Examples: Homes, streets, parks, roads

Disorder: Deteriorated buildings, abandoned lots, poorly maintained parks, pothole-filled roads, cracked sidewalks, lack of streetlights

Description: The

relationships and

organizations present

Examples: Community

neighborhood residents

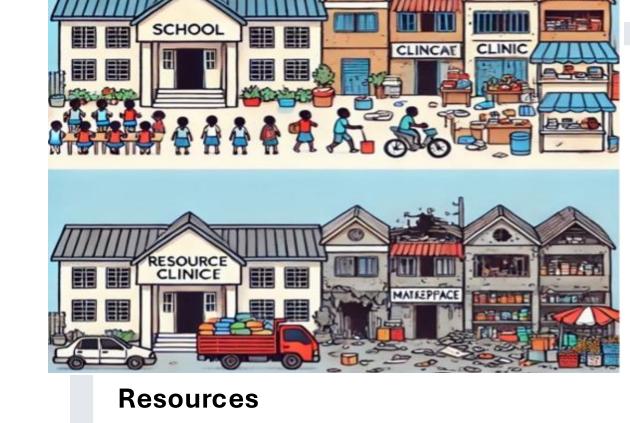
events, friends, family,

and what they do

Disorder: loitering,

public intoxication,

fights, presence of



essential services **Description:**



Environmental Aspects

METHODS

Study Design:

Photovoice: Community-Based Participatory Research (CBPR)

In-depth Interviews

Kenyatta National Hospital Comprehensive Care Center

Setting:

Participants:

40 PLHIV, 18 years old and above, balanced by gender and viral suppression status.

In-Depth Interviews (IDIs) + short survey

Photovoice Focus Group Discussions (FGDs): 4 sessions +photo exhibit

20 PLHIV share experiences on neighborhood disorder crime perception, and ART adherence self-efficacy

20 PLHIV capture images of transportation and neighborhood experiences.

IN-DEPTH INTERVIEW COMPONENT

Short survey

- Demographics Transportation Questionnaire o Perceived Neighborhood Observation Scale (PNOS)
- HIV medication adherence Self-efficacy Scale (ASES) o Perceived Fear of Crime Scale (PFCS)

Most recent viral load

In-depth interview

Neighborhood Physical Condition Neighborhood Social Perceived Safety and crime HIV care routine and Transport

PHOTOVOICE COMPONENT

Session 1: Training & Assignment



- Training on objectives, photography techniques, and ethics.
- Participants take 2-3 photos over 7 days on neighborhood, transport, and HIV

Session 2: Theme Identification

- Complete SHOWeD form for each photo. Participants present
- photos. Discuss challenges, efficiencies transport choices, and emerging themes

Session 3: Consensus & Group - Refining theme

- o Select 3-4 key photos. Complete and present SHOWeD forms.
- o Reach consensus on Develop group

statement.

Session 4: Review & Exhibit

Planning - Finalizing output

- Review selected photos & statements. Conduct postphotovoice evaluation
- o Plan photo exhibit.

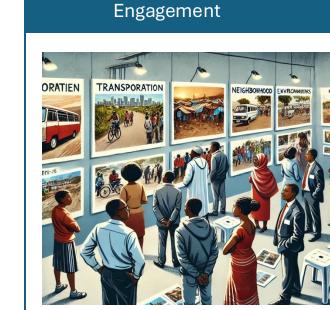


Photo Exhibit - Community

Display photos with group statement for stakeholders

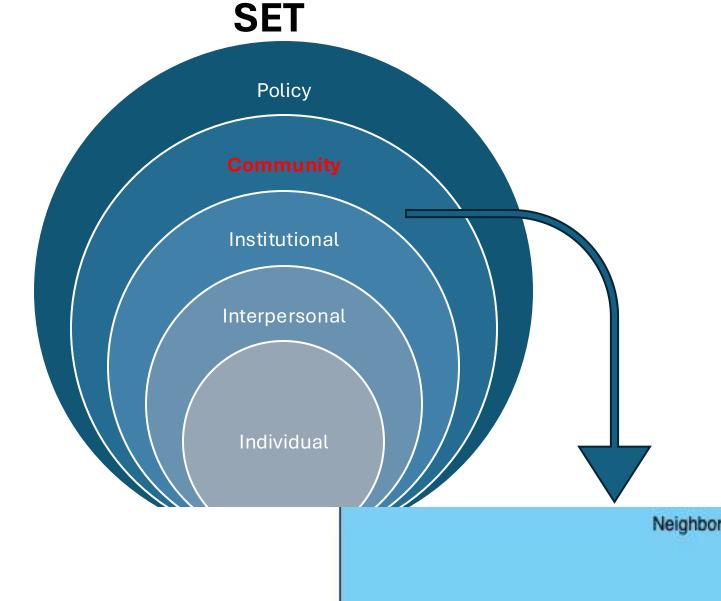
THEORETICAL FRAMEWORKS

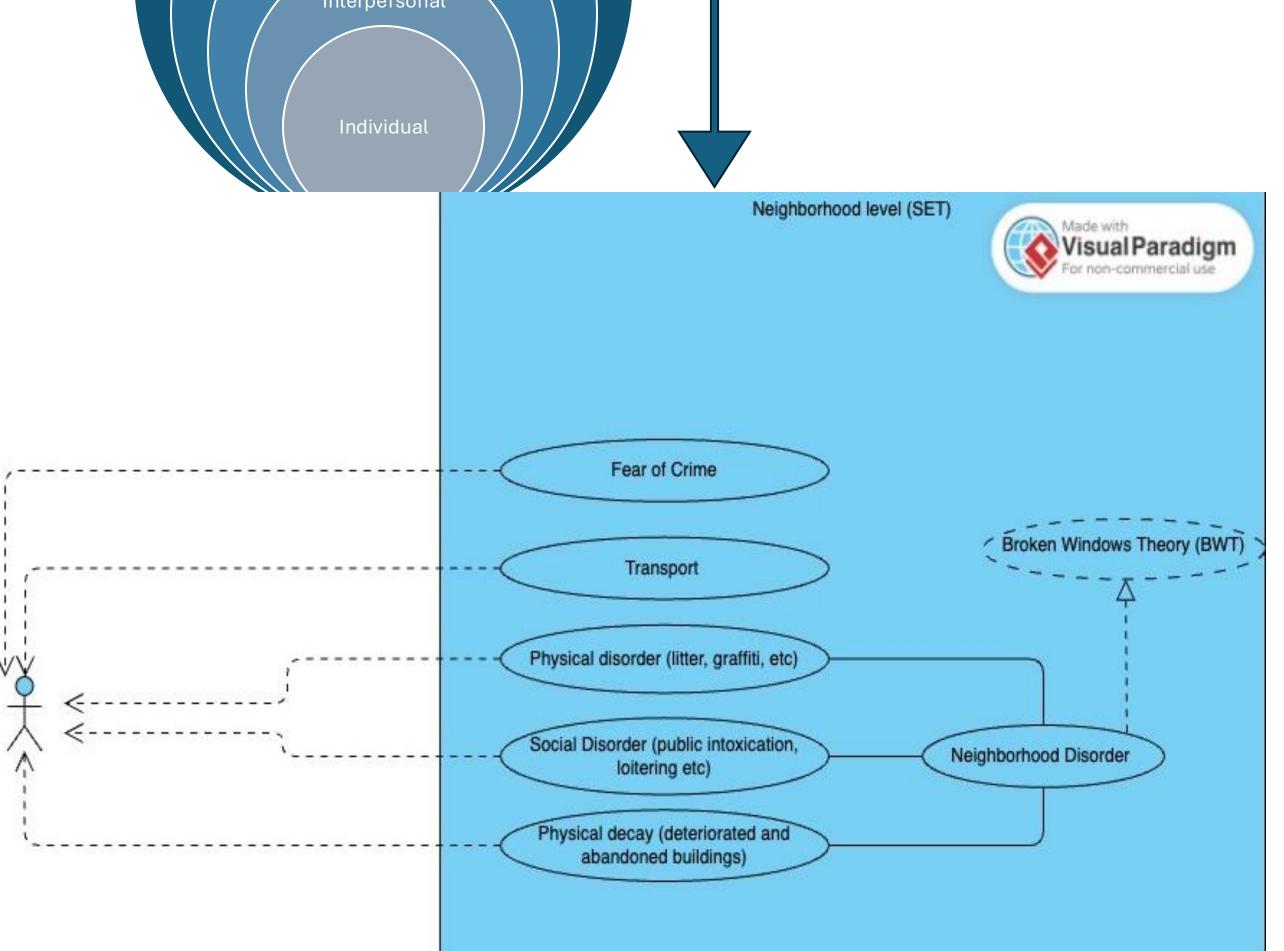
Social Features

- Social-Ecological Theory (SET): suggests that health outcomes are influenced by environmental factors
- Broken Windows Theory (BWT): Wilson & Kelling, 1982 state that visible disorder (e.g., broken windows, graffiti, crime) weakens social control, leading to further deterioration and crime. Visible sign of neighborhood disorder such as neglect and decay—can lead to a diminished sense of control over one's environment which in turn can translate to a diminished sense of control over one's health
- Combining SET and BWT, this study provides a framework to understand how the physical and social environment jointly shape HIV care.

OBJECTIVES

- Explore how transportation challenges and neighborhood disorder, fear of crime, and transportation challenges influence ART adherence self-efficacy and HIV care engagement
- Utilize the photovoice methodology (using photographs to tell a story) to provide a multidimensional understanding of these influences.





EXPECTED FINDINGS

- We hope to identify socio-ecological and structural barriers to HIV care management. We also hope to provide insights for policy adjustments and interventions to improve HIV care in disordered environments as well as transportation.
- This study protocol uses a theory-informed innovative combination of photovoice and IDIs within a CBPR framework to explore socio-ecological barriers to HIV care. Placing PLHIV perspectives at the center enhances cultural relevance and impact.
- The innovation lies in amplifying participants' voices by integrating visual and narrative data, providing a multi-dimensional understanding of how environmental factors influence HIV care.

REFERENCES

2. James Q. Wilson, George L. Kelling. Broken Windows: The police and neighborhood safety. The Atlantic Monthly. Mar 1982 4. Ridgway JP, Almirol EA, Schmitt J, Schuble T, Schneider JA. Travel Time to Clinic but not Neighborhood Crime Rate is Associated with Retention in Care Among HIV-Positive Patients. AIDS and Behavior. 2018/03/31. 2018;22: 3003–3008. doi:10.1007/s10461-018-2094-50-018-2094-5. Surratt HL, Kurtz SP, Levi-Minzi MA, Chen M. Environmental Influences on HIV Medication Adherence: The Role of Neighborhood Disorder. American journal of public health. 2015;105: 1660–6. doi:10.2105/AJPH.2015.302612 6. Shacham E, López JD, Önen NF, Overton ET. The Relationship of Social Support and Neighborhood Perceptions among Individuals with HIV. Journal of the International Association of Providers of AIDS Care (JIAPAC). 2017;16: 440–445. doi:10.1177/232595741666803 7. Lankowski AJ, Siedner MJ, Bangsberg DR, Tsai AC. Impact of Geographic and Transportation-Related Barriers on HIV Outcomes in Sub-Saharan Africa: A Systematic Review. AIDS and Behavior. 2014;18: 1199–1223. doi:10.1007/s10461-014-0729-8 8. Kimaru LJ, Habila MA, Mantina NM, Madhivanan P, Connick E, Ernst K, et al. Neighborhood characteristics and HIV treatment outcomes: A scoping review. Ho HT, editor. PLOS global public health. 2024;4: e0002870. doi:10.1371/journal.pgph.0002870 9. Marco M, Gracia E, Tomás JM, López-Quílez A. Assessing neighborhood disorder: Validation of a three-factor observational scale. The European Journal of Psychology Applied to Legal Context. 2015;7: 81–89. doi:10.1016/j.ejpal.2015.05.001 Protocol, Version 1.0 10. O'Brien DT, Farrell C, Welsh BC. Broken (windows) theory: A meta-analysis of the evidence for the pathways from neighborhood disorder to resident health outcomes and behaviors. Social science & medicine (1982). 2019;228: 272–292. 11. Wang C, Burris MA. Photovoice: concept, methodology, and use for participatory needs assessment. Health education & behavior: the official publication of the Society for Public Health Education. 1997;24: 369–87. doi:10.1177/109019819702400309

12. Camlin CS, Charlebois ED. Mobility and its Effects on HIV Acquisition and Treatment Engagement: Recent Theoretical and Empirical Advances. Current HIV/AIDS reports. 2019;16: 314–323. doi:10.1007/s11904-019-00457-2 13. Lankowski AJ, Siedner MJ, Bangsberg DR, Tsai AC. Impact of geographic and transportation-related barriers on HIV outcomes in sub-Saharan Africa: a systematic review. AIDS and behavior. 2014;18: 1199–223. doi:10.1007/s10461-014-0729-8

FUNDING

NIH Fogarty International Center & Office of Behavioral and Social Sciences Research.



Transforming our world through Precision Emergency Medicin

