Material deprivation and sexual risk nexus among young people in urban disadvantaged settings in Malawi and South Africa

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Research note

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Abstract

Objective: Understanding how context-specific measures of urban disadvantage are associated with sexual risk is critical to the refinement of effective HIV prevention interventions in urban disadvantaged settings in sub-Saharan Africa. This study describes how a mixed methods research design was used to get a more nuanced understanding of young people’s experience of material deprivation and their motivation for sexual risk-taking in urban disadvantaged settings. The study involved secondary analysis of data (n=560) from South Africa, primary qualitative study with 60 young people and household survey (n = 1,071) in Malawi. Legitimation strategies were used to identify inferences from the findings. Material deprivation characteristics that explained the most variance in sexual risk were determined by using logged coefficients multiplied by their standard deviations.

Results: In South Africa, financial difficulty (0.16 = (log 2.11)*(0.50)) exerted the strongest effects on sexual risk followed by deprivation (0.10 = (log 1.43)*(0.66)) among young women, while for young men, material deprivation (0.04 = (log 1.20)*(0.50)) showed significant effects on sexual risk-taking. However in Malawi, material deprivation (0.08 = (log 1.37)*(0.58)) and unemployment (0.12 = (log 1.77)*(0.50)) were the most influential indicators of deprivation associated with coercive sex among young women and young men respectively.

Introduction

Unprecedented urban growth is occurring in sub-Saharan Africa, where approximately 75 percent of the growing urban population are young people [1]. This growth has been accompanied by rapid growth of urban disadvantaged settings, where approximately 70 percent of the urban population lives [2]. Recent studies have shown that prevalence and incidence of HIV in these settings is double (or more) than that in non-slum settings [3–6]. This character of high HIV prevalence and incidence has been linked to high risky sexual behaviour in disadvantaged urban settings [7, 8]. Given that these settings are home to a growing and increasingly marginalized group of young people [9], there is need to understand context-specific influences of HIV-related sexual risk and their unique needs to refine effective HIV prevention interventions that will impact strongly on the epidemic.

Deprivations of material resources such as food, housing and health care are currently receiving increased research attention as critical influences of sexual risk in disadvantaged urban settings in sub-Saharan Africa [10–13]. This attention is premised on the understanding that traditional income-related measures of disadvantage (income, wealth and education) do not reflect unique basic needs, particularly for vulnerable groups of young people living in urban disadvantaged settings [3, 13, 14]. In this regard, urban scholars have suggested a shift from income-related measures of disadvantage to measures that capture critical aspects of disadvantage that best represent the unique needs of vulnerable groups in poor urban settings [10, 13, 15]. These measures include aspects of housing quality, instability and overcrowding [16]; availability, accessibility and utilization of food [17] and affordability, acceptability and availability of health care [18, 19]. However, there is currently limited rigorous research on measuring
these aspects in relation to sexual risk, particularly among young people living in disadvantaged urban settings in sub-Saharan Africa. Importantly, a key limitation in previous studies is that there is no consistency on what constitutes and how to measure these critical living conditions in urban disadvantaged settings. Moreover, the association between material deprivation and sexual risk is most frequently examined through the inclusion of either one dimension of deprivation or a single deprivation-related item [10]. It is likely that additional nuance underlying this association is not yet explored given that single-item measures of deprivations overestimate or underestimate the statistical significance leading to biased results [20].

The current study contributes to the literature by describing how a mixed methods research design was used to explore how young people's experiences of deprivation of material resources are linked to sexual risk and to engage in an in-depth examination of context-specific characteristics that contribute to sexual risk using data from two countries—Malawi and South Africa. The two countries are helpful examples of currently urbanizing and most urbanized countries in sub-Saharan Africa with some similarities between urban disadvantaged contexts, but also with large variations due to the historical, political and economic situations of the respective countries. For instance, previous research in Malawi [21–23] and South Africa [24, 25] has highlighted that young people living in urban disadvantaged settings are at high risk of HIV acquisition. Existing research in both countries also highlights similar challenges faced by the growing numbers of young people in disadvantaged urban settings, which include unemployment, poor access to education, health care, food, and continue to experience high levels of sexual abuse [21, 24].

**Methods**

Two sub studies were undertaken based on a sequential exploratory design (Figure 1), in which each sub study was conducted on a different sample of young people. Sub study 1 was a secondary analysis of quantitative data (n = 530) extracted from the loveLife survey in South Africa [12]). Sub study 2a included five focus group discussions, 12 in-depth interviews, undertaken with a total of 60 young people [26], and Sub study 2b was a household survey of young people (n = 1,071) in Malawi [11]. Sub study 1 was used to examine association between material deprivation and sexual risk-taking among 18–23 year old young women and young men in urban disadvantaged settings using secondary data from South Africa and apply the findings of this analysis to the study design and methods in Malawi. The primary qualitative study was used to explore the role of material deprivation in sexual decision making among 18–23 year old young men and young women in urban disadvantaged settings in Blantyre, Malawi. The analyses of qualitative data focused on understanding local expressions of deprivation and the how dimension of sexual experience and risk. A second quantitative phase (Sub study 2b) using a mirrored questionnaire was developed based the literature and hypotheses generated during the exploratory qualitative study.

*Figure 1: Graphical representation of a mixed methods design used in the study*
Synthesizing the two sub studies using legitimation strategies

The method that was developed for synthesizing the two sub studies involved an application of previously published legitimation strategies [27]. At the conceptualization phase of this study, a secondary analysis of quantitative data from South Africa was undertaken and the results of this secondary analysis informed the study design and methods for the Malawi study. This was to offset the weaknesses of a single data collection method for understanding the complex nature of material deprivation in relation to sexual practices. This strategy is referred to as weakness minimization [27]. Qualitative and quantitative methods were mixed to acknowledge that a combination of both paradigms would lead to a more nuanced understanding of material deprivation.

Statistical analysis

Descriptive statistics were used to clarify patterns of HIV risk by sex and country. Logistic regression models were used to determine whether there is a direct association between material deprivation and sexual risk and the results were published elsewhere [11, 12]. The current study involved the use of logged coefficients from logistic regression multiplied by their standard deviations [28] to determine measures of material deprivation which explained the most variance in sexual risk.

Results

Patterns of sexual risk vary by sex, and country in urban disadvantaged settings

Prevalence of ‘no condom use at last sex’ was significantly higher in both young men and young women living in urban disadvantaged settings in Malawi than their counterparts in South Africa (45.6% vs. 19.5% (p<0.001) for young men, and 65.7% vs. 21.3% (p<0.001) for young women). With regards to multiple (two or more) sexual partners, young people in Malawi reported significantly lower numbers than their counterparts in South Africa (49.3% vs. 64.1% (p = 0.002) for young men, and 18.7% vs. 28.7% (p = 0.032) for young women). The prevalence of coercive sex in Malawi was 15.8% and 44.4% in young men and young women respectively (coercive sex was not measured in the South African study). Lastly, transactional sex (measured by gift-giving) was significantly higher in young men and young women in Malawi than their counterparts in South Africa (66.4% vs. 11.2% (p<0.001) for young men, and 52.0% vs. 5.5% (p<0.001) for young women) (Table 1).

Table 1: Prevalence of unsafe sex in Malawi and South Africa by sex
Deprivation measures with the most variance in explaining sexual risk

For young women, financial difficulty \((0.16 = (\log 2.11)*(0.50))\) exerted the strongest effects on sexual risk followed by material deprivation \((0.10 = (\log 1.43)*(0.66))\) in the South African study. On the other hand, the measure of disadvantage that demonstrated noteworthy and significant effects on sexual risk in the model for young men was material deprivation \((0.04 = (\log 1.20)*(0.50))\). From the Malawi study, material deprivation \((0.08 = (\log 1.37)*(0.58))\) and unemployment \((0.12 = (\log 1.77)*(0.50))\) were the most influential variables of disadvantage associated with coercive sex among young women and young men respectively (Table 2).

*Table 2: Measures of deprivation with the most variance in explaining sexual risk*

**Discussion**

This study has highlighted how a mixed methods approach was used to ascertain a better understanding of the young people's motivations for sexual risk in urban disadvantaged settings in South Africa and Malawi. Instead of presenting an argument for mixed methods research design, this study has described how a mixed methods research approach was used to get a more nuanced understanding of young people's experience of deprivation of material resources and their motivation for sexual risk-taking in urban disadvantaged settings in Malawi and South Africa. This study also engaged in an in-depth examination of context-specific characteristics that contribute to HIV risk in urban disadvantaged settings. It is evident that local deprivation indicators must be explored using a mixed methods approach in order to better understand sexual risk among young people in disadvantaged urban settings.

Each data source used in this study contributed to the comprehensive examination of material deprivation and sexual risk. The secondary analysis of quantitative data from South Africa involved an analysis of critical indicators of material deprivation to inform the study design and methods in Malawi. This approach provided an opportunity to gain a sense of the critical local measures of material deprivation in Malawi. However, the quantitative data sources did not capture how and why young people experienced certain aspects of material deprivation, for instance desire for high social goods. Thus, data from focus group discussions and in-depth interviews added richness of the data with regards to how the study participants explained their experiences of material deprivation and why certain influences facilitated their motivations for sexual risk-taking. Furthermore, focus group data gave an opportunity to examine the prevalence of shared experiences and meanings of material deprivation and HIV risk among a group of the study participants, whereas the in-depth interviews provided face-to-face discussions to elucidate and elaborate critical components of material disadvantage linked to sexual risk.

**Limitations**
The quantitative results were to validate the qualitative findings. Therefore, explaining the causal associations using statistical analysis was not the primary objective for this study. Furthermore, the study findings may derive from other individual household’s unique needs and local environmental characteristics, which were not measured.

**Abbreviations**

FGDs: Focus Group Discussions  
HIV: Human Immunodeficiency Virus  
HSRC: Human Sciences Research Council  
IDIs: In-depth Interviews

**Declarations**

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Contributions

MK conceived the original idea and implemented the study design. MK analysed the data, interpreted the data and drafted the manuscript. MK further worked on the revision of the draft and read and approved the final draft.

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Ethics approval and consent to participate

The Human Research Ethics Committee (Medical) of the University of the Witwatersrand (certificate M120658) and National Health Sciences Research Committee in Malawi (certificate 1078) approved the study protocol. All participants provided written informed consent before any study procedures were conducted.

Consent for publication

Not applicable.

Competing interests

The author declares that he has no competing interests.

Availability of data and materials

Not Applicable.

References
1. UN-HABITAT: *The state of African cities: A framework for addressing urban challenges in Africa.* In Book *The state of African cities: A framework for addressing urban challenges in Africa* (Editor ed.^eds.). City: United Nations Human Settlements Programme; 2008.

2. UN-HABITAT: *United Nations Human Settlement Program (UN-Habitat), State of African cities 2010. Governance, inequalities and urban land markets.* In Book *United Nations Human Settlement Program (UN-Habitat), State of African cities 2010. Governance, inequalities and urban land markets* (Editor ed.^eds.). City: UN-Habitat; 2010.

3. Thomas L, Vearey J, Mahlangu P: *Making a difference to health in slums: An HIV and African perspective.* The Lancet 2011, 377:1571–1572.

4. Madise JN, Ziraba AK, Inungu J, Khamadi SA, Ezeh A, Zulu EM, Kebaso J, Okoth V, Mwau M: *Are slum dwellers at heightened risk of HIV infection than other urban residents? Evidence from population-based HIV prevalence surveys in Kenya.* Health & Place 2012.

5. Rehle T, Shisana O, Zuma K, Puren A, Parker W: *National HIV incidence measures - new insights into the South African epidemic.* South African Medical Journal 2007, 97:194–199.

6. Kyobutungi C, Ziraba A, Ezeh A, Ye Y: *The burden of disease profile of residents of Nairobi’s slums: Results from a Demographic Surveillance System.* Population Health Metrics 2008, 6:1.

7. Greif MJ, Dodoo FN-A, Jayaraman A: *Urbanisation, poverty and sexual behaviour: the tale of five African cities.* Urban Studies 2011, 48:947–957.

8. Zulu EM, Dodoo FN, Chika-Ezee A: *Sexual risk-taking in the slums of Nairobi, Kenya, 1993–8.* Population studies 2002, 56:311–323.

9. Mmari K, Astone N: *Urban adolescent sexual and reproductive health in low-income and middle-income countries.* Archives of disease in childhood 2014, 99:778–782.

10. Greif MJ: *Housing, medical, and food deprivation in poor urban contexts: implications for multiple sexual partnerships and transactional sex in Nairobi’s slums.* Health & place 2012, 18:400–407.

11. Kamndaya M, Kazembe LN, Vearey J, Kabiru CW, Thomas L: *Material deprivation and unemployment affect coercive sex among young people in the urban slums of Blantyre, Malawi: A multi-level approach.* Health & place 2015, 33:90–100.

12. Kamndaya M, Thomas L, Vearey J, Sartorius B, Kazembe L: *Material deprivation affects high sexual risk behavior among young people in urban slums, South Africa.* Journal of urban health: bulletin of the New York Academy of Medicine 2014, 91:581–591.

13. Kunnuji M: *Basic deprivation and involvement in risky sexual behaviour among out-of-school young people in a Lagos slum.* Culture, health & sexuality 2014, 16:727–740.
14. Vearey J, Palmary I, Thomas L, Nunez L, Drimie S: *Urban health in Johannesburg: the importance of place in understanding intra-urban inequalities in a context of migration and HIV*. Health & Place 2010, 16:694–702.

15. Mberu B, Mumah J, Kabiru C, Brinton J: *Bringing sexual and reproductive health in the urban contexts to the forefront of the development agenda: the case for prioritizing the urban poor*. Matern Child Health J 2013, 17:1–6.

16. Aidala A, Cross J, Stall R, Harre D, Sumartojo E: *Housing status and HIV risk behaviors: Implications for prevention and policy*. AIDS and Behavior 2005, 9:251–265.

17. Ivers LC, Cullen KA: *Food insecurity: Special considerations for women*. The American Journal of Clinical Nutrition 2011, 94:1740S–1744S.

18. Peters DH, Garg A, Bloom G, Walker DG, Brieger WR, Hafizur Rahman M: *Poverty and access to health care in developing countries*. Annals of the New York Academy of Sciences 2008, 1136:161–171.

19. Thiede M, McIntyre D: *Information, communication and equitable access to health care: a conceptual note*. Cadernos de saude publica 2008, 24:1168–1173.

20. Noble M, Barnes H, Wright G, Roberts B: *Small area indices of multiple deprivation in South Africa*. Social Indicators Research 2010, 95:281–297.

21. Mkandawire P: *Vulnerability of adolescents to HIV/AIDS in Malawi*. PhD Thesis. University of Western Ontario, Department of Health Geography; 2011.

22. Mkandawire P, Luginaah I, Tobias J: *Landscapes of economic deprivation and locally distilled liquor (kachasu): an emerging milieu of HIV/AIDS risk in urban Northern Malawi*. Environment and Planning 2011, 43:2384–2398.

23. Madise JN, Zulu E, Ciera J: *Is poverty a driver for risky sexual behaviour? Evidence from national surveys of adolescents in four African countries*. African Journal of Reproductive Health 2007, 11:83–98.

24. Tenkorang EY, Maticka-Tyndale E, Rajulton F: *A multi-level analysis of risk perception, poverty and sexual risk-taking among young people in Cape Town, South Africa*. Health & Place 2011, 17:525–535.

25. Burns PA, Snow RC: *The built environment and the impact of neighborhood characteristics on youth sexual risk behavior in Cape Town, South Africa*. Health & Place 2012, 18:1088–1100.

26. Kamndaya M, Vearey J, Thomas L, Kabiru CW, Kazembe LN: *The role of material deprivation and consumerism in the decisions to engage in transactional sex among young people in the urban slums of Blantyre, Malawi*. Global public health 2015.
27. Cooper JN, Hall J: *Understanding black male student athletes’ experiences at a historically black college/university: A mixed methods approach* *Journal of Mixed Methods Research* 2016, 10 46–63.

28. Pampel FC: *Logistic regression: A primer.* Sage; 2000.

**Tables**

**Table 1:** Prevalence of unsafe sex in Malawi and South Africa by sex

|                          | Young men (%) | Young women (%) |
|--------------------------|---------------|-----------------|
|                          | Malawi  | South Africa | p-value | Malawi  | South Africa | p-value |
| No condom use at last sex| 45.6    | 19.5         | <0.001   | 65.7    | 21.3         | <0.001  |
| Multiple (2 or more) sexual partners | 49.3    | 64.1         | 0.002    | 18.7    | 28.7         | 0.032   |
| Coercive sex*            | 15.8    | –            | –        | 44.4    | –            | –       |
| Transactional sex        | 66.4    | 11.2         | <0.001   | 52.0    | 5.5          | <0.001  |

* Not measured in the South African study

**Table 2:** Measures of deprivation with the most variance in explaining sexual risk
| Measures of disadvantage | Young men | Young women | Young men | Young women |
|--------------------------|-----------|-------------|-----------|-------------|
| Material deprivation    | (log 1.20)*(0.50) = 0.04 | (log 1.43)*(0.66) = 0.10 | -         | (log 1.37)*(0.58) = 0.08 |
| Financial difficulty    | -         | (log 2.11)*(0.50) = 0.16 | -         | -           |
| Unemployment            | -         | -           | (log 1.77)*(0.50) = 0.12 | -           |

**Figures**

![Graphical representation of mixed methods research design used in the study](image)

**Figure 1**

Graphical representation of mixed methods research design used in the study