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Housing, medical, and food deprivation in poor urban contexts: implications for multiple sexual partnerships and transactional sex in Nairobi's slums

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ABSTRACT

Identifying the factors that lead to sexual risk behavior is crucial in addressing the HIV epidemic in sub-Saharan Africa. Scholars have primarily relied on traditional measures of SES (income, wealth, and education) to predict risk, overlooking measures of deprivation in important social arenas such as housing, medical care, and food expenses. Findings demonstrated that all three deprivation measures, particularly housing and health care, were robust influences of sexual risk even while controlling for traditional SES measures. A multifaceted deprivation framework appears crucial to the development of effective policy interventions to diminish HIV infection.

1. Introduction

It is becoming increasingly important to identify the factors that lead to risky sexual behavior and consequently human immunodeficiency virus (HIV) infection and transmission in sub-Saharan Africa, as approximately two-thirds of HIV-related deaths worldwide occurred in the region (UNAIDS, 2008). Studies spanning various continents have focused on socioeconomic status (SES) as a determinant of risk behavior, but have primarily relied on income, wealth, and education measures to capture how deprivation renders individuals more vulnerable to risky sex (Adamczyk and Greif, 2011; Ananth and Koopman, 2003; Billy et al., 1994; Brewster, 1994; Brewster et al., 1993; Dodoo et al., 2007; Greif et al., 2011; Weiser et al., 2007; Zulu et al., 2002). Although liquid and illiquid assets and human capital should shape individuals' abilities and motivations to avoid risky sexual behavior, disparities in findings call into question the most appropriate operationalization of socioeconomic status. Instead of focusing on the relationship between absolute levels of resources and sexual risk, we argue that exploring deficits in households' abilities to meet their economic needs is a necessary next step to produce more meaningful findings and ultimately effective HIV prevention policies.

Many studies have attributed adverse health effects of slum poverty in sub-Saharan Africa in part to desperate survival tactics, such as women exchanging sex for money or material goods, as well as to the general disinclination to use condoms, be it in sexual transactions or romantic relationships (Dodoo et al., 2003; Orubuloye et al., 1993; Zulu et al., 2003). Despite these findings, our understanding of risky sexual behavior in the growing poor urban communities would benefit from refined specification of how deprivation interplays with risky sexual behavior. In recent years research has begun to examine the multifaceted nature of poverty and hardship (Heflin and Iceland, 2009; Sen, 1976; Wagle, 2008). We further this framework by focusing on specific indicators of deprivation, specifically surrounding insufficient housing, hunger, and medical care, to explain risky sexual behavior using the 2001 Nairobi Cross-Sectional Slum Survey (NCSS). Findings from this study will inform policymakers on how to best channel scant resources to reduce HIV infection.

2. Economic Deprivation and Risky Sexual Behavior

In recent years, scholars have reinvigorated a dialogue on how to conceptualize poverty and inequality in a way that best represents individuals' living experiences (Brady, 2003; Heflin and Iceland, 2009; Nilsson, 2010; Ravallion, 1996; Tsui, 2002; Wagle, 2008). Poverty is increasingly viewed as a multidimensional construct, and can reflect insufficiency in various arenas of life that are important to well-being, including nutrition, adequate shelter/housing, and health and health care (Heflin and Iceland, 2009; Wagle, 2008). Defining deprivation as shortfalls or deficiencies in meeting basic needs, as opposed to the presence or

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lack of a pre-determined amount of resources, can paint a more accurate picture of the varied obstacles households face (Brady, 2003; Nilsson, 2010; Ravallion, 1996; Tsui, 2002; Wagle, 2008). Since deprivation in specific societal arenas is a function of shortage in capital, it should therefore be a more proximate indicator of risk than income, education, and wealth.

While some studies have examined how specific dimensions of deprivation influence risk behavior such as substance abuse, few have explored the link between dimensions of deprivation and risky sexual behavior, such as multiple sexual partnerships, lack of condom use, or sex work (Dewilde, 2004; Heflin and Iceland, 2009; Mirowsky and Ross, 1999; Noble et al., 2010; Vearey, 2008). Since there has been a lack of attention to the mechanisms and dynamics that link specific aspects of deprivation to Women's risky sexual behavior outcomes in Africa (Wojcicki, 2005), existing literature is not sufficiently equipped to inform HIV prevention strategies, in Africa and around the world.

2.1. Dimensions of Deprivation

We focus here on the most vital needs that are imperative for survival, suggesting that lack of appropriate food, shelter, and health care can induce anxiety and detrimental coping mechanisms that may in turn induce risky sexual behavior. A decent body of evidence using United States-based samples shows that homelessness is associated with risky sexual behavior and HIV infection (Aidala et al., 2005; Robertson et al., 2004; Wenzel et al., 2004). Little attention, though, has been paid to individuals who have homes but still perceive their housing circumstances to be precarious. Housing in slum settlements in sub-Saharan Africa is particularly tenuous, as residents rarely own their homes and face the risk of displacement due to, among others, government efforts to raze slums (UN-HABITAT, 2006). There are virtually no temporary alternatives, such as shelters, to assist those who lose their homes, thus the fear of becoming homeless is an ever-present one that can strongly influence Women's decisions surrounding sexual activity (Surratt and Inciardi, 2004; Weir et al., 2007). Women may turn to formal or informal sex work or engage with more sexual partners in order to accrue economic benefits (Eaton et al., 2003; Wamoyi et al., 2010), while the stress related to housing insecurity can increase depression and a sense of fatalism that diminishes inhibitions from detrimental or destructive behavior (Ajrouch et al., 2010). Additionally, women may turn to substance abuse in order to cope with such stress, which can in turn lead to risky sexual behavior (Cooper et al., 1995; Pearlin et al., 1981; Seth et al., 2011).

Food insecurity can be defined as "expressions of deprivation, uncertainty, or concern over access to an adequate food supply" (Lee and Greif, 2008: 4). Food insecurity is associated with anxiety, aggravation, depression, and lack of mastery (Heflin and Ziliak, 2008; Siefert et al., 2004; Vozoris and Tarasuk, 2003), motivating behaviors to alleviate this stressor. Food insufficiency has also been linked to substance abuse in sub-Saharan Africa, potentially heightening the likelihood of risky sexual behavior (Sorsdahl et al., 2011). Women's capacity to earn income in the formal economy, already weakened by gender norms that hinder Women's educational and occupational advancement, can suffer due to chronic hunger and therefore heighten their dependence on men for resources (Sacks and Levi, 2010; Weiser et al., 2007; Zulu et al., 2003).

A number of studies have examined the relationship between risk and economic deprivation (Ananth and Koopman, 2003; Billy et al., 1994; Brewster, 1994; Brewster et al., 1993; Dodoo et al., 2003; Dunkle et al., 2010; Greif et al., 2011; Orubuloye et al., 1993; Weiser et al., 2007; Zulu et al., 2002), though they have not addressed the relationship between the ability to pay for health care and risky sexual behavior. Given the prevalence of HIV in sub-Saharan Africa, as well as other ailments such as tuberculosis and malaria, unmet medical needs may be powerful influences of Women's pursuit of romantic or sexual relations with men to obtain costly drugs or care. Even when women are not experiencing illness themselves, supporting the medical treatment of family members with HIV or other ailments has become a significant burden on women (Russel and Schneider, 2000), driving risk behavior for monetary rewards or stress relief.

We conceptualize deprivation with measures that have not been frequently employed by studies of disadvantage and risk. Here, self-assessments of individuals' needs, or rather their expressed ability to meet vital needs, comprise our primary variables of interest. This type of measure requires individuals to consider their multitude of household-specific expenditures, compare them with their available resources, and ultimately determine whether a deficiency exists. Instead of accounting for innumerable extenuating circumstances that require devoted resources, our approach inherently controls for unmeasured expenses and should mitigate concerns about omitted variable bias.

Poverty may also affect health-related outcomes by operating through neighborhood context, since poorer households cannot afford to live in communities that provide the infrastructure and social dynamics that support health-promoting behavior (Baumer and South, 2001; Billy et al., 1994; Brewster, 1994; Browning et al., 2008; Sampson et al., 2002). Although we cannot directly test neighborhood effects in the current study, we essentially control for disadvantageous neighborhood conditions by examining only slum residents. This lends greater confidence that any individual-level deprivation effects uncovered here exist above and beyond harsh community conditions.

Deprivation may not universally affect the risky sexual behavior, as contextual and familial characteristics may amplify or dampen its effect. The greater acceptability (and lower stigmatization) of promiscuity in urban settings may diminish Women's apprehension of promiscuity and exchanging sex for money. The visible presence of prostitutes can convey a lack of employment and educational opportunities and the viability of sexual relations as an alternative avenue to make ends meet. The current study examined whether observations of local prostitutes amplifies risky sexual behavior, particularly among women who are less able to afford vital needs. Further, inability to meet parental and familial obligations can induce anxiety, particularly when women do not have husbands or stable partners (Ajrouch et al., 2010; Dunkle et al., 2010; Loza et al., 2010; Mayer and Jencks, 1989; Rose, 1999; Ross and Huber, 1985), and here we explore whether women facing financial obstacles who are not in union and who have children to support are more likely to engage in sex for monetary rewards.

Overall, economic strain and deprivation can heighten susceptibility to risky sexual behavior due to detrimental survival tactics, stress, depression, loss of esteem, orientation towards living in the present as opposed to the future, and coping mechanisms such as substance abuse (Pearlin et al., 1981; Kuruvilla and Jacob, 2007; Mossakowski, 2008; Ross and Huber, 1985). We update the traditionally-used framework by including both general and specific facets of deprivation, and by examining risky sexual behavior in two ways: multiple sexual partnerships and exchanging sex for money. Accordingly, we test the following hypotheses:

Hypothesis 1. *Specific facets of deprivation (i.e., housing, health care, and food deprivation) will heighten women's likelihood of engaging in risky sexual behavior, and their effects be at least as strong as those of traditional SES measures.*