Urban Poverty and Sexual Behavior in Five African Cities
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Introduction

This paper explores the generalizability of recent assertions about the relationship between urban poverty and sexual behavior across five African metropolises. Recent work in Nairobi has argued a link between urban poverty and sexual behavior such that the former makes the poor more susceptible to risky sexual behavior as they, among other things, try to make ends meet (Zulu et al. 2002). Further work clarified that the implications of poverty in urban contexts far outstripped the effects in rural areas insofar as HIV-related sexual outcomes are concerned (Dodoo et al. 2006). Yet, this new genre of evidence has been focused on Nairobi a city in which almost two-thirds of the population lives in slums, begging the question of whether other African cities of varying character evidence the same concerns. We address this question with comparative data from Accra (Ghana), Dar-es-Salaam (Tanzania), Harare (Zimbabwe), Kampala (Uganda), and Nairobi (Kenya). These cities reflect vastly different proportions resident in slums (see Table 1.1).

The world has experienced unprecedented growth in urban population over the last fifty years, and no region is currently urbanizing faster than Africa. According to the United Nations' projections (United Nations 2004), by the year 2030, over 50 percent of the population in Asia and Africa will reside in urban areas. Historically, during the period of transition to a high level of urbanization, countries have also experienced rapid economic growth. Unfortunately, this has not been true for African countries where urbanization has not generally been accompanied economic growth (Fay and Opal 2000). With Africa also burdened with the highest levels of HIV/AIDS, a phenomenon manifesting a higher incidence in urban versus rural areas, the question of the relationship between urban poverty and HIV-related sexual behavior is an important one.

Among the Millennium Development Goals, the goal explicitly focusing on urban areas is the one aiming to improve the lives of at least 100 million slum dwellers. Slum dwellers constitute a major segment of the urban poor in Africa. Improvement in the livelihoods of the slum dwellers is key to a substantial reduction in poverty and eradicating hunger in urban areas. It is now well recognized that urban populations are heterogeneous and that health outcomes in many slum settings are actually worse than in rural areas (UN 2005). In addition to establishing

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that poor people reside both in slum and non slum urban areas, current research is focused on intra-urban differences in health outcomes.

There is evidence that women constitute a sizeable segment of the vulnerable population in urban areas. For instance, African women are at a greater risk of getting infected by HIV/AIDS at an earlier age than men and this difference is more pronounced in urban than in rural areas (USAID 2004). However, there is a dearth of empirical studies on urban poverty issues and its implications for sexual behavior and reproductive health care in urban areas. It is this lacuna that our research seeks to fill.

This research tests the empirical relationship between urban poverty and risky sexual behavior among urban residents in five African cities, viz. Accra, Nairobi, Dar es Salaam, Kampala, and Harare. The objective of the multi-country study is to explore the consistency and strength of the relationship between urban poverty and risky sexual behavior across the selected countries. Specifically, we want to uncover differences in the sexual behavior of women residing in slums and non slum residents.

Data

For the analysis, we use data collected as part of Demographic and Health Survey (DHS). The specific rounds we use are: Ghana (2003), Kenya (1993, 1998, 2003), Tanzania (1996, 1999), Uganda (1995, 2000) and Zimbabwe (1999).

Methods

We primarily focus on two variables that have bearing on the spread of HIV; these variables which reflect risky sexual behavior are multiple sexual partnerships and age at first sexual intercourse. All the respondents were asked their age at first sexual intercourse. In addition they were asked the following question: 'In the last 12 months how many different persons (other than your husband/man you are living with) have you had sexual intercourse with?' We only included the DHS rounds / surveys where these questions were consistently asked.[3]

In order to be able to uncover intra-urban differences, we would need information on households residing in slum and non slum urban areas. In the absence of actual slum identifiers, we use the measure proposed by Zulu et al. (2002) to identify slum households. They identify a slum household as one that is characterized by the absence of three basic household amenities;

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[3] In some of the surveys respondents were asked this question with references to six-month period. We chose the waves where the question pertaining to sexual partner question was asked with reference to twelve month period only.

electricity, flush toilets, and running water[4]. Any household in a major metropolis (e.g., the capital cities of African countries) that lacks all three of these basic amenities is classified a slum household, while one having all three is considered to not be in a slum. The households that had one or two of these amenities were defined as intermediate households.

Preliminary Results

Information on a total of 5197 female respondents across all cities is available. Of these 16 percent, 46 percent and 38 percent belonged to slum, intermediate and non slum households (Table 1.1). Average age at first intercourse ranges between 13.8 and 14.8 years among slum residents. According to our data, 8 percent of the slum dwellers have never had sexual intercourse. Where as this figure is 36 percent and 55 percent respectively for intermediate and non slum residents.

Table 1.1: Percent Living in Non Slum, Slum, and Intermediate by Major African Cities, 1993-2003						
	Slum		Intermediate		Non Slum	
	Freq.	Percent	Freq.	Percent	Freq.	Percent
All	841	16	2374	46	1982	38
Accra	76	11	393	55	247	35
Dar es Salaam	92	9	808	83	70	7
Harare	10	2	77	14	452	84
Kampala	423	39	572	53	77	7
Nairobi	240	13	524	28	1136	60

Based on their place of residence, we first explore the pattern of attrition among women who have never had sexual intercourse. Life table analysis and Cox proportional hazard models are used to examine the differences between slum, non slum and intermediate households. Age, religion, marital status, and education are included as controls in the multivariate proportional hazards model. Logit and OLS (Ordinary Least Square) regression analyses will be conducted to examine the effect of residence on number of sexual partners.

Table 1.2 presents the life table analysis which indicates that a woman from the slums starts sexual intercourse at an earlier age than women from intermediate and non slum households. The rates are similar across place of residence till the age of 14 and then there is an increase in attrition among slum women. 3 percent of the non slum women and 14 percent of the slum women have had sexual encounter by the age of 12. Women residing in slum areas are

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[4] The UN-Habitat defines a slum household as one that lacks any one of the following five elements: access to improved water, access to improved sanitation, security of tenure, durability of housing and sufficient living area.

clearly vulnerable. This can also been seen in the Cox proportional models as shown in Table 1.3 where hazard rate of non slum dwellers is about 55 percent of slum dwellers. It is evident from Table 1.3 that older women initiate sexual intercourse at an earlier age than younger women. Also increased educational attainment delays the initiation. Impact of age and education can be seen across all the four models.

Table 1.2: Life Table Cumulative Proportions for Age at First Sex by Residence and Age						
Age Interval	All Women			Women Who Grew Up in City		
	Slum	Intermediate	Non Slum	Slum	Intermediate	Non Slum
8-10	0.9988	0.9983	0.998	1	0.999	0.9986
10-12	0.9832	0.9898	0.9944	0.9852	0.9884	0.9958
12-14	0.8741	0.9363	0.9727	0.8967	0.936	0.9846
14-16	0.542	0.6882	0.848	0.5498	0.6754	0.8627
16-18	0.2506	0.3912	0.6348	0.2472	0.3634	0.6499
18-20	0.0971	0.1682	0.3687	0.0959	0.1463	0.3838
20-22	0.0216	0.0586	0.1727	0.0295	0.0552	0.1765
22-24	0.0084	0.0242	0.0859	0.0074	0.0223	0.084
24-26	0.0012	0.0136	0.0333	0	0.0136	0.0308
26-28	0	0.0059	0.0101		0.0039	0.007
Cases	834	2354	1980	271	1032	714

The multivariate analysis examining the relationship between residence and multiple sexual partners show that slum dwellers are more likely to have more sexual partners than both intermediate and non slum dwellers. Separate models are estimated for married women and for women in the age category of 15 to 24. This is shown in Table 1.4. With respect to the controls, married women are found to have more sexual partners than unmarried women and same is true for women in female-headed households. We also find that women following Islam are less likely to have multiple partners than their Christian counterparts.

	Model 1 15-49 All Women			Model 2 15-49 Women Who Grew-up in City			Model 3 15-24 All Women			Model 4 15-24 Women Who Grew-up in City		
	Coeff.	Hazard Ratio	z	Coeff.	Hazard Ratio	z	Coeff.	Hazard Ratio	z	Coeff.	Hazard Ratio	z
Residence (Reference: Slum)												
Intermediate	-0.1883	0.8284	-4.2	-0.1123	0.8938	-1.45	-0.1462	0.8640	-2.14	0.0151	1.0152	0.13
Non Slum	-0.6129	0.5418	-11.57	-0.5132	0.5986	-5.16	-0.7993	0.4496	-9.56	-0.7325	0.4807	-4.61
Years (Reference: Kenya 2003)												
Kenya 1993	0.2355	1.2656	3.53	0.1150	1.1219	0.81	0.2222	1.2489	2.14	0.0664	1.0686	0.33
Kenya 1998	0.4238	1.5277	6.68	0.1561	1.1689	1.09	0.3144	1.3694	3	-0.1806	0.8347	-0.82
Ghana 2003	-0.1985	0.8199	-3.54	-0.2866	0.7508	-2.98	-0.7022	0.4955	-6.48	-0.8358	0.4335	-4.74
Zimbabwe 1999	0.0339	1.0345	0.56	0.0555	1.0571	0.52	0.0287	1.0291	0.29	0.0757	1.0786	0.44
Uganda 1995	0.4345	1.5442	6.95	0.3697	1.4473	2.71	0.2943	1.3421	3.04	0.0988	1.1039	0.5
Uganda 2000	0.3110	1.3648	5.01	0.3005	1.3505	3	0.1817	1.1992	1.88	0.1892	1.2082	1.16
Tanzania 1996	0.0203	1.0205	0.33	-0.0288	0.9716	-0.25	-0.0617	0.9401	-0.62	-0.3453	0.7080	-1.91
Tanzania 1999	0.2244	1.2515	3.05	0.2373	1.2678	2.15	0.0095	1.0096	0.08	-0.1513	0.8596	-0.84
Religion												
Muslim	-0.0400	0.9608	-0.92	-0.0774	0.9255	-1.13	-0.0305	0.9700	-0.44	0.0310	1.0315	0.3
Age of respondent	0.0090	1.0090	4.73	0.0117	1.0117	3.79	0.0217	1.0220	2	0.0591	1.0609	3.54
Years of schooling	-0.0687	0.9336	-16.71	-0.0844	0.9191	-11.66	-0.0925	0.9117	-11.86	-0.1141	0.8914	-8.87
Number of cases	5160			2014			2448			1029		
chi2 (13)	976.32			434.59			516.39			263.64		
Log likelihood	-32809			-10754.			-11440			-3916		

Table 1.3: Age at First Sex and Residence, Cox Proportional Hazard Ratio Model

Table 1.4: Multiple Sexual Partners and Residence, OLS			
Respondent's Characteristics	All Women *Model 1*	Married Women *Model 2*	Women aged 15-24[1] *Model 3*
Residence (Reference: Slum)			
Intermediate	-0.100 (0.026)***	-0.059 (0.022)***	-0.102 (0.038)***
Non Slum	-0.130 (0.029)***	0.046 (0.027)*	-0.184 (0.043)***
Length of stay	0.001 (0.001)	0.001 (0.001)	-0.003 (0.002)
Religion (Reference: Christians)			
Muslims	-0.080 (0.024)***	-0.085 (0.022)***	-0.007 (0.036)
Marital Status (Reference: Currently married)			
Divorced	-0.244 (0.049)***		-0.224 (0.122)*
Widowed	-0.574 (0.054)***		
Never Married	-0.512 (0.022)***		-0.512 (0.030)***
Sex of the household head (reference: male)			
Female	0.111 (0.021)***	0.113 (0.022)***	0.097 (0.030)***
Place where grew up (Reference: City)			
Town	0.007 (0.025)	0.054 (0.023)***	-0.042 (0.039)
Village	-0.015 (0.021)	0.061 (0.019)***	-0.042 (0.033)
Working Status (Reference: Not working)			
Working	0.093 (0.018)***	0.032 (0.017)*	0.105 (0.026)***
Age (Reference: 35-49)			
24-34	0.038 (0.026)	-0.004 (0.020)	
15-24	0.042 (0.029)	0.097 (0.024)***	-0.111 (0.028)***
Education (Reference: No education)			
Primary	0.043 (0.035)	-0.059 (0.030)**	-0.019 (0.066)
Secondary and higher	0.044 (0.036)	-0.009 (0.032)	-0.030 (0.067)
Constant	0.896 (0.051)***	0.952 (0.044)***	1.047 (0.080)***
Number of cases	4710	2662	2285
R^2	0.2028	0.3646	0.2000

Note: Standard Errors in parenthesis * *Significant at 10%,* ** *Significant at 5%,* *** *Significant at 1%.*
[1] *The reference group in the age category in Model 3 is 20-24 years. Year and country interaction terms included in the analysis but not shown in the table.*

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