Socioeconomic determinants of HIV infection in rural Lesotho

Nkechi Obisie-Nmehielle**,** Mwiza Singini, Njeri Wabiri

Background and Significance: Lesotho is one of the countries with highest HIV prevalence, estimated at 25.6% among people aged 15-59 years in 2017 (LePHIA 2017). The country is faced with a generalized HIV epidemic. There is a dearth of reliable and current data on HIV prevalence in rural migrant communities of origin. Deep rural migrants' communities of origin that share border with South Africa are rarely included in national research, as much attention is paid to urban populated areas. Yet people from very rural communities that border South Africa may be vulnerable to HIV infections. To achieve zero new HIV infections in Lesotho, there is need for research on HIV prevalence in rural communities that share borders with South Africa. Using the social determinants of health theory, this paper seeks to examine the socioeconomic determinants of HIV prevalence in rural migrants' communities of origin that share border with South Africa. Evidence will contribute to context-specific interventions in these rural communities.

Method: A cross-sectional mixed method study design, consisting of qualitative and quantitative approaches was conducted in selected communities in Butha-Buthe, Thaba-Tseka and Quthing districts between June-August 2017. The quantitative aspect involved individual behaviour survey covering the demographics, HIV risk behaviours, symptoms of STIs, as well as HIV-related knowledge, attitude, practices and HIV testing. The biological survey consisted of linked-Integrated Biological and Behavioural Survey (IBBS) and TB screening. All adult members, 18 years and above, from households within the selected communities in the three districts were invited to participate in the survey**.**

This is a secondary analysis involving sexually experienced men and women over 18 years. The outcome variable is HIV status based on the test result, recorded as a binary variable of "HIV Negative 0" and "HIV Positive 1". The main explanatory variables of interest are sex, age group, level of education, marital status, employment status, source of income. Other explanatory variables include sexual behaviour and condom use with different partners. Descriptive analysis, cross-tabulations using chi-square tests and probit regression were employed in quantitative analysis using Stata software version 14.0.

Result: Table1 shows the characteristic of the study sample stratified by sex. The highest age groups are 25-34 (men 25%, women (23.8%) and 55+ (men 31.2%, women 34%). Majority of the study sample had primary or no education and are predominantly unemployed. About 33% of females reported situation of first sex as pressured or forced, and 60% of the men reported their first sexual partner to be 12-17 years. The HIV prevalence in the study population was 17% for men and 26.6% for women.

Table1: Sociodemographic characteristics of respondents stratified by sex

	N=1033				
Variable	**Male**		**Female**		
	Frequency (n)	Percentage (%)	Frequency (n)	Percentage (%)	p-value
District					0,33
Butha-Buthe	98	34,03	252	33,83	
Quthing	111	38,54	257	34,50	
Thaba-Tseka	79	27,43	236	31,68	
Age group (years)					0,94
18-24	51	17,71	128	17,18	
25-34	72	25,00	177	23,76	
35-44	41	14,24	100	13,42	
45-54	34	11,81	87	11,68	
55 +	90	31,25	253	33,96	
Marital status					0,000
Never married	78	27,08	103	13,83	
Married	162	56,25	362	48,59	
Ever married	48	16,67	280	37,58	
Education					0,18
None/Primary	119	50,21	405	56,96	
Incomplete secondary	52	21,94	141	19,83	
Complete secondary/ higher	66	27,85	165	23,21	
Income					0,769
Formal salary	41	14,24	99	13,29	
Contributions/No income	42	14,58	128	17,18	
Grants	56	19,44	157	21,07	
Remittances from South Africa	48	16,67	111	14,90	
Others	101	35,07	250	33,56	
Employment status					0,000
Employed	57	23,08	65	9,88	
Not employed	190	76,92	593	90,12	
Situation of first sex					0,000
Wanted it	281	97,57	501	67,25	
Pressured/forced	7	2,43	244	32,75	
Age at first sex					0,361
Less than 18	91	38,56	240	35,24	
18 years and above	145	61,44	64,76	75,26	
Age of first sexual partner					0,000
12-17	121	60,20	35	6,29	
18-24	71	35,32	326	58,63	
25-34	9	4,48	177	31,83	
35-55	0	0,00	18	3,24	
Age difference between first sexual partner					0,116

10 years or more older or younger	37	12,98	125	16,98	
Not 10 years older or younger	248	87,02	611	83,02	
Had sex in the last 12 months					0,000
Yes	237	82,29	461	61,88	
No	51	17,71	284	38,12	
Number of sexual partners in the last 12 months					0,000
1 partner	147	62,03	400	87,15	
2 or more partner	90	37,97	59	12,85	
Age at first marriage					0,000
Less than 18 years	2	1,09	163	27,44	
18 years and above	182	98,91	431	72,56	
Know a place or person to obtain condom					0,089
Yes	258	90,53	615	86,62	
No	27	9,47	95	13,38	
Distance taken to access a condom close to home					0,000
Less than 15 minutes	112	43,58	195	31,97	
15 to 30 minutes	73	28,40	163	26,72	
More than 30 minutes	72	28,02	252	41,31	
Ever used condom					0,000
Yes	221	76,74	445	59,73	
No	67	23,26	300	40,27	
HIV Status					0,004
Positive	38	16,96	167	26,63	
Negative	186	83,04	460	75,91	

Bivariate analysis revealed the distribution of HIV prevalence by socioeconomic characteristics, with gender and geographical variations (Table not shown). HIV prevalence is highest in communities in Quthing among both men and women compared to other communities. Quthing, Thaba-Tseka and Butha-Buthe had HIV prevalence of 25.3%, 14.9% and 14.9% respectively among men. Among women, they were 33.2%, 28.3% and 18.7% respectively.

Table 2 presents the probit regression and marginal effect of socioeconomic determinants of HIV prevalence in selected communities of Lesotho. Among men, living in Quthing increases the probability of HIV infection by 27% compared to Butha-Buthe (p=0.001)). For women, living in Quithing and Thaba-Tseka increased the probability of HIV infection by 21% (p-value = 0.001) and 12.5% (p-value=0.01) respectively compared to Butha-Buthe. Other socioeconomic determinants of HIV prevalence among women are age, marital status and education. Low

testing for HIV, lack of protection during sexual intercourse by HIV positive people and stigma were identified as factors contributing to increase HIV prevalence in the communities.

Table 2: Multivariate analysis of socioeconomic determinants of HIV infection in rural Lesotho

Variable	Male			Female		
	Marginal Effect *	Coefficient	95% CI	Marginal Effect *	Coefficient	95% CI
Constant	$\frac{dy}{dx}$	-3,53***	[-5,06- -2.00]	$\frac{dy}{dx}$	-1,18***	[-1,91--0,44]
District						
Butha- Buthe (RC)	1	1	1	1	1	
Quthing	0.27	1.33***	[0.57-2,09]	0,21	0,66***	[0.33-0.99]
Thaba-Tseka	0.08	0,66	[-0.23-1,55]	0,125	0.42**	[0.09-0.75]
Age group (years)						
18-24 (RC)	1	1		1	1	
25-34	0.13	1,21**	[-0.08-2,43]	0,23	0.80***	[0.37-1.24]
35-44	0,52	2,35***	[0.95-3,75]	0,365	1.15***	[0.66-1.64]
45-54	0,17	1,37*	[-0.12-2,87]	0,285	0.95***	[0.41-1.48]
55 +	0,18	0,82	[-0,58-2,23]	0,04	0.18	[-0.31-0.68]
Marital status						
Never married (RC)	1	1		1	1	
Married	0,08	0,46	[-0.47-1,40]	-0,25	-0.74***	[-1,15--0,34]
Ever married	0,02	0.16	[-0.97-1.31]	-0,07	-0.18	[-0.62-0,24]
Education						
None/Primary (RC)	1	1		1	1	
Incomplete secondary	0,11	0.51	[-0.22-1,24]	0,02	0,08	[-0,23-0,39]
Complete secondary/ higher	-0,01	-0,07	[-0.87-0.71]	-0,16	-0,56***	[-0,95--0,18
Source of income						
Formal salary (RC)	1	1		1	1	
No income/Contributions	0,02	0,09	[-1.03-1.23]	-0,04	-0,15	[-0,65-0,34]
Grants	-0,09	-0,54	[-1,80-0,71]	-0,11	-0,37	[-0,90-0,16]
Remittances from South Africa	0,009	0,03	[-1.09-1,16]	0,02	0,07	[-0,41-0,57]
Other Sources	-0,05	-0,29	[-1,49-0,90	0,005	0,01	[-0,44-0,48]
Employment Status						
Employed (RC)	1	1		1	1	
Not employed	0.07	0,49	[-0,30-1.28]	0,08	0,27	[-0,19-0,73]

*** significant at p-value <0.01, **significant p-value <0.05, CI: Confidence Interval and RC=Reference Category