Assessing the Impact of Social Stigma and Sexual Health Behavior on Perceived Vulnerability to HIV Infection Among Adolescent Girls in Kenya

Bethany Jones, Dr. Helen Mahony, Dr. Daniel Grischy, and Dr. Karin Brewster

Florida State University, Public Health Program, College of Social Sciences and Public Policy

Abstract

- Significant social stigma surrounding HIV/AIDS in Kenya.
- Sexual Health Behavior highly related to risk of HIV transmission. Adolescent Girls particularly vulnerable to HIV transmission.
- Secondary data analysis using dataset containing survey data from 328 schools in Kenya. Using dataset of survey responses from female respondents.
- Statistically significant associations found in research question 1, 2, and 3. results indicate social stigma not a good predictor variable for perceived HIV vulnerability and condom use.

Introduction

- Sub-Saharan Africa (SSA) bears a disproportionate amount of the global burden of HIV.
- In 2021 60% of new HIV infection were in SSA. 67% of people living with HIV live in SSA (Moyo et al, 2023).
- Adolescents are more vulnerable to HIV due to several societal and economic factors. Girls are a particularly vulnerable population. Girls aged 15 and older make up 66% of new HIV infections (Dzinamarira & Moyo, 2024).
- Adolescents in SSA are economically marginalized increasing their vulnerability to transactional sex, illicit drug use, and cultural stigmatization of HIV decreases willingness to test or receive treatment for HIV (Dzinamarira & Moyo, 2024).
- Risky sexual health behaviors increase risk of HIV transmission. Unprotected sexual intercourse is the most common risk factor increasing HIV transmission risk. Underlying social factors associated with increased high-risk behaviors are lower income and education levels (Wondmeneh & Wondmeneh, 2023).

Research Questions

1. Does social stigma around HIV impact perceived vulnerability to HIV infection?
2. Does social stigma around HIV impact condom use?
3. Does sexual activity impact perceived vulnerability to HIV?

Methodology

- Secondary data analysis using dataset ”Education, HIV, and Early Fertility: Experimental Evidence from Kenya”.
- Dataset sourced from Open Inter-university Consortium for Political and Social Research.
- 328 schools in Kenya surveyed from 2003-2007. Dataset 3 used in study contained survey responses from female study.

Respondent demographics:

N = 4462 (mode grade = 7 , standard deviation for grade = 0.801)

Gender: N= 4462 (100% female)

Data Analysis

- Binary logistic regression conducted to answer research question 1.
- Binary logistic regression conducted to answer research question 2.
- Odds ratio conducted to answer research question 3.
- 3 questions indicating social stigma summed to create social stigma score.

Results

Table 1: Binary Logistic regression for RQ1

		95% C.I. for Exp(B)			
	Exp(B)	Lower	Upper	Sig	B
HIV Stigma Score	1.111	1.033	1.196	0.005	0.106

The p value for Research question 1 was **p= 0.005** which is statistically significant.

Table 2: Binary Logistic regression for RQ2

		95% C.I. for Exp(B)			
	Exp(B)	Lower	Upper	Sig	B
HIV Stigma Score	0.885	0.818	0.957	0.002	-0.122

The p value for Research question 1 was **p= 0.002** which is statistically significant.

Table 3

Block 0: classification table for RQ1

		Predicted HIV Vulnerability		
Observed		0.00	1.00	Correct percentage
HIV Vulnerability	0.00	0	1798	0.0
	1.00	0	2603	100.0
Overall percentage				59.1

Table 4

Block 1: classification table for RQ1

		Predicted HIV Vulnerability		
Observed		0.00	1.00	Correct percentage
HIV Vulnerability	0.00	0	1798	0.0
	1.00	0	2603	100.0
Overall percentage				59.1

No change between null model and independent variable model.

Table 6

Block 0: classification table for RQ2

			Predicted did pupil use condom last time they had sex		Percentage correct
Observed			No	Yes	
Did pupil use condom last time they had sex		No	3118	0	100.0
		Yes	1344	0	0.0
Overall percentage					69.9

Table 7

Block 1: classification table for RQ2

			Predicted did pupil use condom last time they had sex		Percentage correct
Observed			No	Yes	
Did pupil use condom last time they had sex		No	3118	0	100.0
		Yes	1344	0	0.0
Overall percentage					69.9

No change between null model and independent variable model

Table 8

Odds ratio showing the relationship between sexual activity and HIV vulnerability

		95% Confidence Interval	
	Value	Lower	Upper
Odds Ratio for ever had sex (yes/no)	1.489	1.316	1.685
N for Valid Cases	4351		

The **confidence interval does not contain 1** so results statistically significant. Odds ratio greater than 1, perceived vulnerability increased by sexual activity.

Discussion

The results indicate that social stigma is not a good indicator of both perceived vulnerability to HIV and condom usage. Despite the statistically significant relationship. Social stigma may not be a good predictor variable for perceived HIV vulnerability or condom usage because there might not be a strong enough association between predictor and outcome variables, interaction effects, or omitted variable bias.

Odds ratio indicates that respondents who were not sexually active were 48.9% more likely to feel less vulnerable to HIV. Respondents who are not sexually active have lower risk of HIV transmission which may contribute to their perception of decreased vulnerability to HIV.

References

Duflo, Esther, Dupas, Pascaline, and Kremer, Michael. Replication data for: Education, HIV, and Early Fertility: Experimental Evidence from Kenya. Nashville, TN: American Economic Association [publisher], 2015. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [distributor], 2019-10-12. https://doi.org/10.3886/E112899V1

Dzinamarira, T., & Moyo, E. (2024). Adolescents and young people in sub-Saharan africa: Overcoming challenges and seizing opportunities to achieve HIV epidemic control. *Frontiers in Public Health*, *12*. https://doi.org/10.3389/fpubh.2024.1321068

Moyo, E., Moyo, P., Murewanhema, G., Mhango, M., Chitungo, I., & Dzinamarira, T. (2023). Key populations and Sub-Saharan Africa’s HIV response. *Frontiers in Public Health*, *11*. https://doi.org/10.3389/fpubh.2023.1079990

Wondmeneh, T. G., & Wondmeneh, R. G. (2023). Risky sexual behaviour among hiv-infected adults in sub-saharan Africa: A systematic review and meta-analysis. *BioMed Research International*, *2023*(1). https://doi.org/10.1155/2023/6698384

Acknowledgements

Thank you to my research mentor Dr. Helen Mahony. I also want to thank my Honor in the Major committee members Dr. Daniel Grischy and Dr. Karin Brewster for their advice and support.