

Is Marriage Protective? Risk Factors for HIV/HSV2 Infection among Young Women in the KND of Northern Ghana



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Outline of Presentation

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Background

- Sub-Saharan Africa has the greatest burden of HIV/AIDS.
 - It constitute a huge impediment to the attainment of the MDGs in the sub-region
 - In the absence of a cure, prevention remains a key public health priority especially in Sub-Saharan Africa
- Unprotected heterosexual intercourse is the dominant mode of HIV transmission in Africa.
- Recently, attention is being drawn on rising levels of HIV infection among married couples
- Addressing HIV infection among couples is critical to the attainment of MDG6 ie (halting and reversing the spread of HIV by 2015) and related goals on child and maternal survival and alleviation of poverty

Study Justification

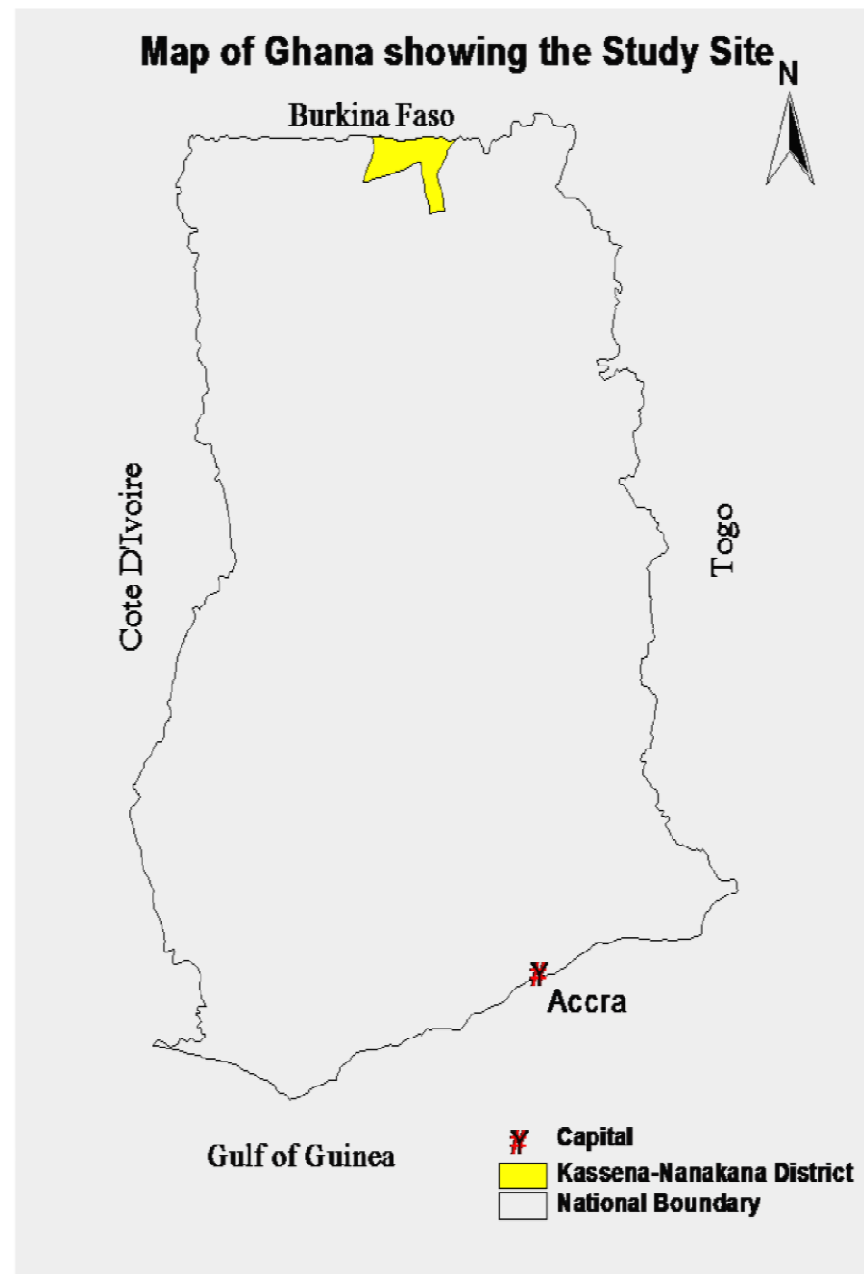
- This study focuses on females 16-24 years old because
- In a growing number of countries in sub-Saharan Africa, females bear the greatest burden of HIV infection eg
- In some countries, HIV infection among sexually active 15-19 year olds females are 2 - 6 times higher than that of their male counterparts
- Compared to females, only fewer males marry at younger ages
- In Sub-Saharan Africa, it is not uncommon to find as high as 40-60% of girls marrying before their 20th birthday
(Shelley Clark 2004)
- Investigating risk factors for HIV infection among married females will provide evidence of the needs of women and facilitates the development and implementation of gender sensitive interventions to address the epidemic in Africa

Objectives of the study

- To examine the prevalence of HIV and Herpes simplex virus type II (HSV2) among married and unmarried 16 – 24 year old females in the KNED of Northern Ghana
- To assess the effect of marriage on HIV/HSV2 infection among 16-24 year old females
- To explore other factors associated with HIV and HSV2 among married and unmarried 16-24 year old females in the KNED

Study Site

- 1,675 square kilometers
- 150, 000 people
- Largely rural (82%)
- Two main ethnic groups (Kassena-54%, Nankana- 44%)
- 10-24 year olds form a third of the district population
- Prevalence of HIV among antenatal attendance is 2.8%



Design

- Data came from a district wide social and biomedical survey of 10-24 year olds in the KND of Northern Ghana
- Using the NDSS database, a random sample of 15% all compounds with at least one member aged 10-24 years was generated
- Fieldworkers visited these compounds and identified eligible respondents for participation following the granting of consent
- To ensure dispersion in the coverage, a maximum of 2 respondents of same sex were interviewed in each compound
- **Eligibility in the biomedical** survey depended on prior participation in the social survey

Sample collection and Processing

- An immunochromatographic test (Determine HIV by Abbott Diagnostic) was used to detect antibodies to HIV
- The HSV type II IgG test based on the indirect ELISA principle was used to detect antibodies to HSV2
- 5% of the samples randomly selected for quality control at the Noguchi Memorial institute, Accra, Ghana
- The HSV2 samples were the first in the country and so we could not get an independent laboratory with the requisite experience to do quality control in Ghana.

Analysis

- The analysis in this study is limited to 16-24 year old females
- We used regression analysis to assess the relative risk of HIV/HSV2 infection among married and unmarried girls
- To assess the net effect of marriage on HIV/HVS2 infection, we controlled for the effects of age (here stratified), education, religious affiliation (condom use, multiple sexual partnership, etc)

Background Characteristics

Variable	N= 592	Percentage Distribution
Married	170	28.7%
Never Married	422	71.3%
HIV		
Positive	12	2.1%
Negative	580	97.9%
HSV 2		
Positive	79	13.3%
Negative	513	86.7%
Age Group ((Yrs)		
16 - 19	381	64.4%
20 – 24	211	35.6%
Education		
No education	117	19.8%
Primary	223	37.7%
JHS	188	31.7%
Secondary+	64	10.8%
Religion		
Christians	503	84.9%
Moslems	23	3.9%
Traditional	44	7.4%
Other	22	3.8%

Prevalence of HIV/HSV2 among 16-24 year olds by Marital Status

Variable	N=592 n (%)		Married (N=170) n (%)		Never Married (N=422) n (%)		P - Value
HIV							
Positive	12	(2.1)	6	(3.5)	6	(1.4)	0.100
Negative	580	(97.9)	164	(96.5)	416	(98.6)	
HSV2							
Positive	79	(13.3)	32	(18.8)*	47	(11.1)	0.013
Negative	513	(86.7)	138	(81.3)	375	(88.9)	

*Significant ant at P<0.05

Prevalence of HIV/HSV2 among sexually active 16-24 year olds by Marital Status

Variable	N=278 n (%)	Married (N=167) n (%)	Never Married (N=111) n (%)	P - Value
HIV				
Positive	9 (3.2)	6 (3.6)*	3 (2.7)	0.681
Negative	269 (96.8)	161 (96.4)	108 (97.3)	
HSV2				
Positive	49 (17.6)	32 (19.2)*	17 (15.3)	0.410
Negative	229 (82.4)	135 (80.8)	94 (84.7)	

*Not significant at P<0.05%

Relative Risk of Contracting HSV2 among 16-24 year olds

Variable	Univariate Module		Multivariate Module	
	Unadjusted OR [95% CI]	P-Value	Adjusted OR [95% CI]	P-Value
Marital Status				
Never Married	1		1	
Married	1.85 [1.13 – 3.02]	0.014	1.42 [0.75 – 2.70]	0.277
Age Group (Years)				
16-19	1		1	
20-24	2.78 [1.35 – 3.51]	0.001	1.52 [0.81 – 2.87]	0.194
Education				
No education	1		1	
Primary	0.55 [0.29 – 1.04]	0.066	0.72 [0.36 – 1.44]	0.352
JHS	0.57 [0.29 – 1.11]	0.098	0.72 [0.35 – 1.48]	0.373
Secondary+	1.17 [0.54 – 2.52]	0.697	1.39 [0.59 – 3.30]	0.446
Religion				
Christians	1		1	
Moslems	***	**	**_	**
Traditional	0.99 [0.40 – 2.44]	0.988	0.85 [0.33 – 2.21]	0.743
Other/No Religion	1.39 [0.46 – 4.25]	0.555	1.24 [0.39 – 3.87]	0.710

Relative Risk of Contracting HSV2 among sexually active 16-24 year olds

Variable	Univariate		Multivariate	
	Unadjusted OR [95% CI]	P-Value	Adjusted OR [95% CI]	P-Value
Marital Status				
Never Married	1		1	
Married	1.31 [0.69 – 2.49]	0.411	1.15 [0.54 – 2.48]	0.715
Age Group (Years)				
16-19	1		1	
20-24	2.35 [1.11 – 4.94]	0.025	1.98 [0.87 – 4.51]	0.104
Education				
No education	1		1	
Primary	0.56[0.25 – 1.29]	0.177	0.70 [0.35 – 3.15]	0.429
JHS	0.59 [0.26 – 1.36]	0.214	0.75 [0.30 – 1.83]	0.521
Secondary+	1.16 [0.47 – 2.82]	0.748	1.35 [0.48 – 3.78]	0.567
Religion				
Christians	1		1	
Moslems	**	**	**	**
Traditional	1.09 [0.39 – 3.05]	0.876	1.05 [0.38-3.15]	0.931
Other/No Religion	1.37 [0.36 – 5.19]	0.645	1.39 [0.36 – 5.50]	0.631

Discussion

- Marriage brings with it an increase risk of HIV/HSV2 infection for women.
- The effect of marriage on HIV/HSV2 infection remains even after controlling for age, education, etc
- High prevalence of HSV2 has serious implications for HIV management
- The legally permissible age for marriage in Ghana is at variance with actual practice especially in rural areas

Study Limitations

- This study is unable to establish if infections occurred before or after marriage
- Not much flexibility as analysis is limited to variable captured in the data set

Conclusion & Recommendations

- Marriage is a considerable risk for HIV and HSV2 infection among females in the KND of Northern Ghana
- Review of the scope of “Key Populations” for HIV prevention (UNAIDS 2005) to include couple in stable relationships
- Intensive and sustained community sensitization and education on HIV/HVS2 with a focus on marriage backed by improved female education will no doubt contribute significantly to the prevention of HIV/HSV2 in rural communities in Ghana
- Further studies are required to identify specific and appropriate HIV prevention programs for married couples.

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THANK YOU