

# Effects of quality of caregiver-adolescent relationship on HIV, HSV-2 and on pregnancy incidence among young women in rural South Africa enrolled in HPTN 068

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## Background

In South Africa adolescent girls and young women (AGYW) are 2 – 3 times more likely to be infected with HIV<sup>1</sup>.

AGYW are disproportionately affected by HSV-2<sup>8,9</sup> – with a prevalence of 29.2% and 10.0% in young (15 – 26 years) females and males, respectively<sup>10</sup>.

Pregnancies are high as well in AGYW. Among 15-19-year-old girls, 16% have begun childbearing<sup>14</sup>.

The ecological theory (Fig. 1) explains relationships with family influence development over the life course, including behaviors and decision-making skills<sup>17</sup>.

When young people feel connected to caregivers (biological or non-biological guardian), risk behaviors are mitigated. In particular, positive caregiver-adolescent relationships are associated with delayed sexual debut<sup>17,18</sup>, safer sex<sup>17-20</sup> and reduced sexual activity<sup>21</sup>.

### Ecological Theory: Caregiver Support is Crucial

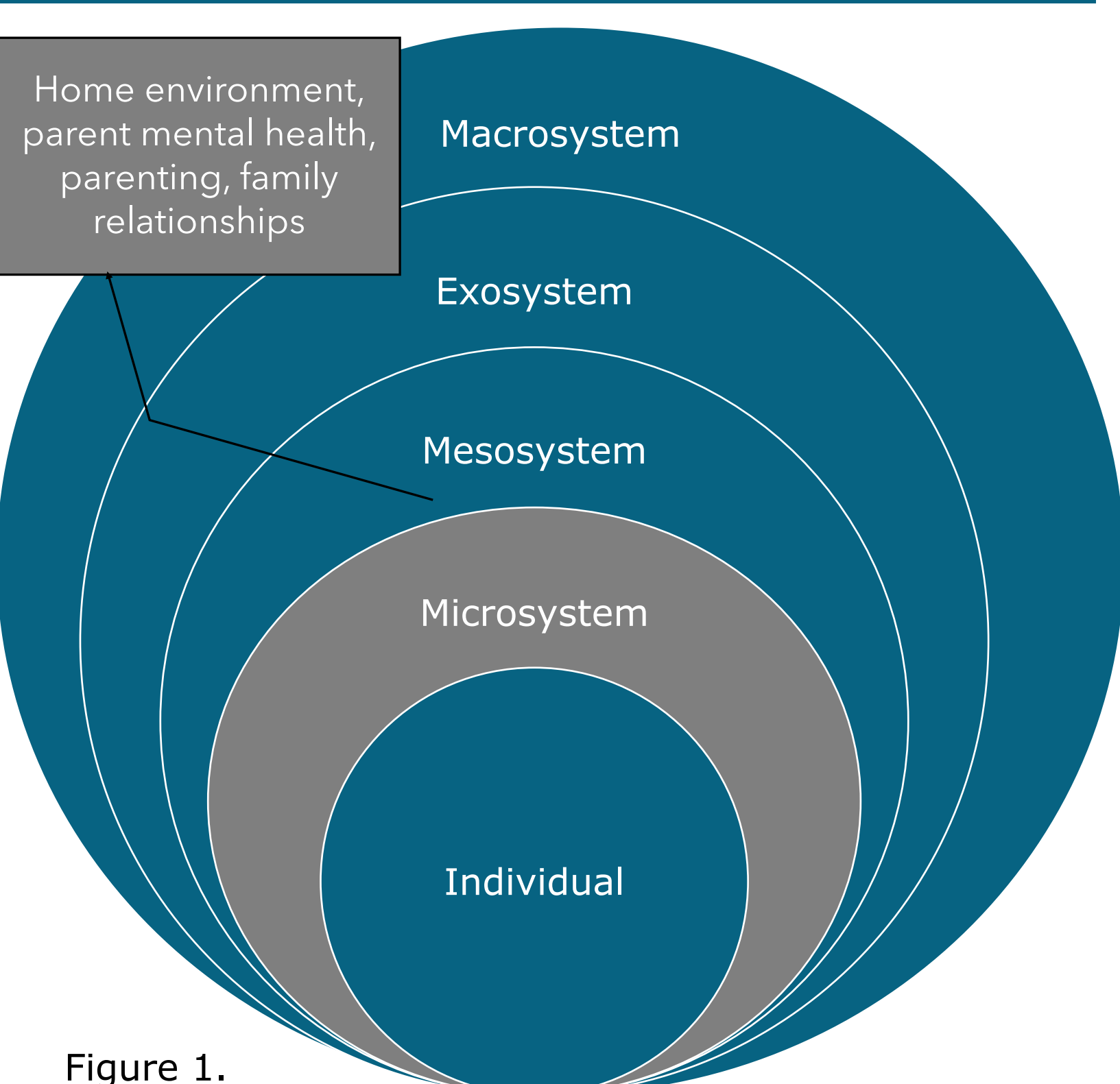


Figure 1.

However, less attention has been paid to the effect of quality of caregiver-adolescent relationships on health outcomes associated with these risk behaviors such as sexually transmitted infections (STIs) and pregnancy.

Therefore, in this study we aimed to understand the association between caregiver-adolescent relationships and HIV, HSV-2 and pregnancy incidence in a cohort of rural, South African adolescent girls.

## Results

**Table 1. Caregiver-adolescent relationships on STIs & pregnancy**

	Unadjusted		Weighted	
	Hazard Ratio	(95% CI)	Hazard Ratio	(95% CI)
<b>HIV</b>				
Connectedness	1.01	(0.74, 1.38)	1.03	(0.75, 1.42)
Closeness	0.77	(0.56, 1.07)	0.80	(0.57, 1.11)
<b>HSV-2</b>				
Connectedness	0.86	(0.69, 1.07)	0.87	(0.70, 1.09)
Closeness	0.79	(0.62, 1.00)	0.79	(0.62, 1.00)
<b>Pregnancy</b>				
Connectedness	0.79	(0.67, 0.93)	0.79	(0.68, 0.93)
Closeness	0.77	(0.64, 0.91)	0.76	(0.64, 0.91)

Adjusted for: *HIV & HSV-2*: age, CCT intervention, orphan status, school. *Pregnancy*: age, CCT intervention, orphan status.

AGYW who reported high quality caregiver relationships had a lower hazard of pregnancy incidence

Among 14-19-year-olds, those who reported caregiver caring were less likely to acquire HSV-2

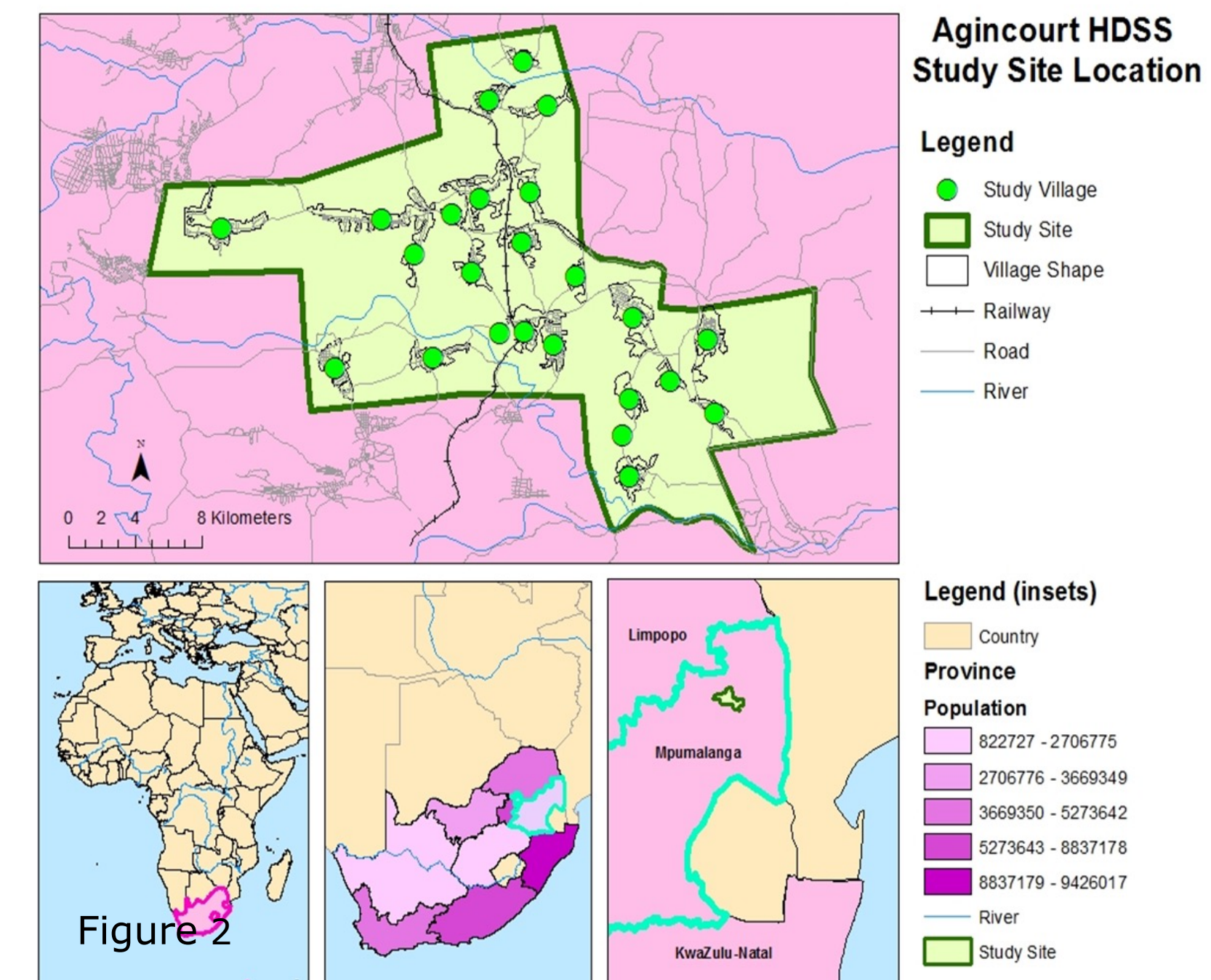
**Table 2. Caregiver-adolescent relationships on STIs stratified by age**

	Unadjusted			Weighted		
	Hazard Ratio	(95% CI)	p-value	Hazard Ratio	(95% CI)	p-value
<b>HIV</b>						
Connectedness						
Age: ≤19 yrs	1.14	(0.69, 1.88)	0.536	1.14	(0.69, 1.88)	0.599
Age: ≥20 yrs	0.93	(0.62, 1.40)	-	0.96	(0.63, 1.46)	-
Closeness						
Age: ≤19 yrs	0.75	(0.52, 1.09)	0.793	0.77	(0.53, 1.12)	0.705
Age: ≥20 yrs	0.84	(0.41, 1.72)	-	0.90	(0.44, 1.86)	-
<b>HSV-2</b>						
Connectedness						
Age: ≤19 yrs	0.68	(0.50, 0.93)	0.0490	0.69	(0.51, 0.94)	0.0487
Age: ≥20 yrs	1.05	(0.78, 1.41)	-	1.07	(0.79, 1.45)	-
Closeness						
Age: ≤19 yrs	0.94	(0.65, 1.34)	0.1803	0.93	(0.65, 1.33)	0.2100
Age: ≥20 yrs	0.68	(0.49, 0.93)	-	0.68	(0.50, 0.94)	-

Adjusted for: *HIV & HSV-2*: age, CCT intervention, orphan status, school.

## Methods

We used longitudinal data from HIV Prevention Trial Network 068 – conducted among 2,533 AGYW (13 – 20 years) over 5 years in Agincourt (Fig. 2), South Africa.



Kaplan Meier and Cox models were used to estimate the effect of quality of caregiver-adolescent relationships (caring and closeness) on STIs (HIV & HSV-2) and pregnancy. We used inverse probability of treatment weights to account for confounding.

Also, we assessed effect measure modification (EMM) by age (14-19 & 20-25 years) for STI risk using stratum-specific estimates and likelihood ratio tests with a p-value <0.1 indicative of EMM.

## Conclusion

AGYW who had more caring and/or closer relationships with their caregiver were less likely to experience a first pregnancy during the study.

In addition, among adolescents (14 – 19 years), those who reported that their caregiver cares for them very much were less likely to acquire HSV-2.

However, there was no association between quality of caregiver-adolescent relationships and HIV acquisition.

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