Age of friends and norms about sexual behaviour are associated with HIV and HSV-2 status amongst young South African women in the HPTN 068 study

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Introduction

South Africa has a severe HIV epidemic with young women highly at risk. While sexual behaviours are important in determining risk, these are conditioned by the social environment in which young women live.

Friendships are a key part of young people’s social environment and might serve as conduits for dominant norms about gender and sexuality, as well as for information and resources and as network connections to sexual partners.

Our research aimed to examine how young women’s friendships might affect their risk of acquiring HIV and Herpes Simplex Virus Type 2 (HSV-2) infections.

Methods

2325 13-20 year-old young women resident in the Agincourt demographic surveillance site, northeast South Africa (Fig 1).

Cross-sectional study using the baseline of HPTN 068 Swa Koteka Conditional Cash Transfer trial, 2011-2012.

Questionnaire modules on demographics, family, education, and sexual behaviour. Each young woman described 5 friendships without identifying friends.

Outcomes: Blood tests for HIV, HSV-2

Friendship net exposures: Age, gender, whether relative, student status, perceived sexual behaviour

Possible confounders: participant’s age, grade, household socio-economic status, attributes of mother/father

Summary measures of 5 friends to describe the ‘friendship net’.

Logistic regression to analyse associations with HIV and HSV-2 status, adjusted for characteristics of participants. Entered first friendship net socio-demographic characteristics (Model 1), and secondly perceived friend sexual behaviour (Model 2).

Excluded those HIV positive and reporting never had sex as possible perinatal infections (n=37, and investigated the plausibility of this assumption (not shown here).

Results

Majority of friends were female, of a similar age, attending school and 22% were also relatives.

73 young women were HIV positive and 108 HSV-2 positive.*

Each additional friend ≥1 year older than the participant was associated with 1.45 times the odds of HIV (95% CI 1.09-1.93), and 1.45 times the odds of HSV-2 (95% CI 1.22-1.73).

Perceiving each additional friend to have had sex was associated with 1.32 times the odds of HIV (95% CI 1.04-1.68), and 1.21 times the odds of HSV-2 (95% CI 1.06-1.38).

Table 2 Adjusted associations between HSV-2 status and friendship characteristics, n=2325

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<table>
<thead>
<tr>
<th>Friendship Net Characteristics</th>
<th>n (% HSV-2)</th>
<th>OR 95% CI</th>
<th>p value</th>
<th>OR 95% CI</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each additional friend</td>
<td></td>
<td></td>
<td>OR</td>
<td>95% CI</td>
<td>p value</td>
</tr>
<tr>
<td>perceived to have had sex</td>
<td>1.7 mean HSV-2</td>
<td>1.45</td>
<td>1.22 1.73</td>
<td>&lt;0.001</td>
<td>1.36 1.14 1.63</td>
</tr>
<tr>
<td>≥1 year older than participant</td>
<td>1.0 mean HSV-2</td>
<td>1.38</td>
<td>1.36 1.14 1.63</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>No male friends</td>
<td>9/1826 (0.5)</td>
<td>1.00</td>
<td>0.87 1.43</td>
<td>0.631</td>
<td>1.18 0.53 2.62</td>
</tr>
<tr>
<td>≥1 male friend</td>
<td>28/2000 (1.4)</td>
<td>1.00</td>
<td>0.87 1.43</td>
<td>0.631</td>
<td>1.18 0.53 2.62</td>
</tr>
<tr>
<td>All friends in school</td>
<td>20/1814 (1.1)</td>
<td>1.00</td>
<td>0.87 1.43</td>
<td>0.631</td>
<td>1.18 0.53 2.62</td>
</tr>
<tr>
<td>≥1 friend out of school</td>
<td>27/475 (5.6)</td>
<td>1.22</td>
<td>0.54 2.73</td>
<td>0.690</td>
<td>1.18 0.53 2.62</td>
</tr>
</tbody>
</table>

Conclusions

• Having a higher proportion of older friends and friends perceived to have had sex was associated with HIV and HSV-2 infection among young women in South Africa.

• Influence from friends on HIV and HSV-2 risk could occur via norms, or via the social network connections of older friends.

• Investigating friendships and HIV and HSV-2 in the study longitudinally would strengthen the evidence for causality.

• Findings could be applicable both to peer education interventions and to interventions that influence young women’s social environments and characteristics of the friendships that they might form.