HIV prevalence and incidence in adolescent girls and young women in Lesotho: results from the LePHIA survey 2016-2017

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Background
HIV acquisition remains high among adolescent girls and young women (AGYW, aged 15-24 years) in sub-Saharan Africa. Few data are available on risk factors for HIV in a nationally representative sample of this population. A Population-based HIV Impact Assessment conducted in Lesotho (LePHIA) in 2016-2017 provides recent data on prevalence and the first assessment of national HIV incidence in AGYW.

Methods
LePHIA used a two-stage sampling design to select a nationally representative sample of adults. Individuals completed an interview and HIV testing. Incidence was measured using HIV-1 LAg avidity paired with viral load data. The association between demographic and behavioral variables and HIV prevalence and incidence was assessed using logistic regression, incorporating survey weights. A time trend in prevalence and indicators of risk was estimated using weighted data from the Demographic Health Surveys (DHS) in 2009 and 2014.

Results
- Of 2708 eligible AGYW, 2358 (87%) were interviewed and tested for HIV. Annualized incidence was high at 1.8% (95% CI:0.8-2.8%), particularly in urban areas (2.3%, 95% CI:0.7-3.9%).
- Weighted HIV prevalence was 11.1% (95% CI:9.7-12.5%) overall, 7.5% in 15-19 year olds (64/1156; 95% CI:4.1-7.2%) and 16.7% in 20-24 year olds (209/1202; 95% CI:14.4-19.0%). This translates into an estimated 5862 HIV-positive 15-19 year olds and 16707 20-24 year olds.
- Since 2009, there has been a decrease in overall prevalence (13.6% to 11.1%), although there was an increase in 15-17 year olds (2.7% to 6.2%; p=0.02, Figure 1), possibly due to increased survival after vertical infection. The largest difference is seen in 23-24 year olds, where there has been a decrease from 31.6% in 2009 to 19.9% in 2017.
- Compared to 2009, there has been a two-fold increase in odds of attending secondary/tertiary education (Odds Ratio [OR] 2.21; 95% CI:1.9-2.56. Figure 2), and a 41% reduction in the odds of sexual debut before 15 years (OR 0.59, 95% CI:0.44-0.79).

Results (continued)
- However, there has been a significant decline in comprehensive HIV knowledge (from 38% in 2014 to 31% in 2017; Figure 3).

Conclusions
HIV prevalence appears to be declining in AGYW, but incidence remains high. Indicators of risk are improving, aside from HIV knowledge, which conveys risk for future acquisition.

Figure 1: National weighted HIV prevalence (%) in AGYW in Lesotho from 2009-2017
Figure 2: Changes in factors associated with HIV risk among AGYW in Lesotho, 2009-2017
Figure 3: Changes in correct HIV knowledge among AGYW in Lesotho, 2009-2017

For the 642 AGYW living with parents, maternal education was strongly protective, even after adjusting for the AGYW’s education, sexual behavior, and household wealth (Table 2).

Table 1. Correlates of HIV infection in AGYW in Lesotho, 2016-2017

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>HIV prevalence (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No mother</td>
<td>18.6</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>1 mother</td>
<td>13.3</td>
<td>0.09</td>
</tr>
<tr>
<td>2 or more mothers</td>
<td>9.8</td>
<td>0.001</td>
</tr>
</tbody>
</table>

Table 2. Parental correlates of HIV infection in AGYW in Lesotho, 2016-2017

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>HIV prevalence (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paternal education</td>
<td>Primary</td>
<td>0.004</td>
</tr>
<tr>
<td></td>
<td>Tertiary/Above secondary</td>
<td>0.000</td>
</tr>
</tbody>
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