Effect of Migration on Sexual and Reproductive Health Outcomes Among Young Women in Rural South Africa:

Preliminary Results From HPTN 068 Post Intervention Data

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Background

- Young women experience high burden of Sexual Reproductive Health (SRH) -related morbidity incl. HIV.
  - HIV rates that are 3 times higher than their male counterparts.
- Migration is an established important structural factor of health outcomes.
- Very little attention has been given to the effect of migration on SRH outcomes among adolescent girls.

Palk and Blower J Acquir Immune Defic Syndr. 2015, Anglewicz et al. AIDS. 2016, Dobra et al. AIDS. 2017
Study Setting

- Agincourt: rural Mpumalanga province
  - Area: 420 km²
- HDSS since 1992
  - 28 villages under surveillance
- High rates of poverty, unemployment and circular labour migration.
  - 60% M, 40% F are labour migrants
- This analysis used HPTN 068 post intervention survey data of 874 young women aged 18-25 years
Study variables

• SHR Outcomes:
  – Pregnancy* and Contraceptive use**: self-reported
  – HIV: Rapid HIV test

• Migration:
  – Migration: have you been away from your home community for more than one month at a time? (12 months)
  – Frequency: on how many separate occasions have you travelled away from your home community and slept away? (12 months)

• Covariates:
  – Age, BMI, currently at school, education level, early sex debut, partnership (life time and recent), condom use, orphan status and primary caregiver education level.

*Pregnancy = pregnant since last study visit
**Contraceptive use = current use
Statistical analysis

• **Main Aim:** To estimate the effect of migration on SRH outcomes among young women in the rural South Africa

  **Aim 1:** Prevalence/Incidence of SRH outcomes.
  – Established a sample for each outcome.
  – Estimated prevalence/incidence and 95% CIs.

• **Aim 2:** To examine the relationship between migration status and each of the SRH outcome,
  – Used logistic regression models.
  – In multivariable analyses, we examined potentially confounding and modification effects of the covariates.
## Results

Table 1: Characteristics of young women by migration status in Agincourt (N=874).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Category</th>
<th>Not migrated N (%)</th>
<th>Migrated N (%)</th>
<th>Total N (%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>≤20</td>
<td>304 (69.1)</td>
<td>136 (30.9)</td>
<td>450 (51.5)</td>
<td>0.044</td>
</tr>
<tr>
<td></td>
<td>&gt;20</td>
<td>305 (75.3)</td>
<td>100 (24.7)</td>
<td>424 (48.5)</td>
<td></td>
</tr>
<tr>
<td>Level of education</td>
<td>Grade ≤11</td>
<td>183 (82.8)</td>
<td>38 (17.2)</td>
<td>221 (25.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>Grade 12</td>
<td>238 (68.0)</td>
<td>112 (32.00)</td>
<td>350 (40.0)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tertiary</td>
<td>188 (68.6)</td>
<td>86 (31.4)</td>
<td>303 (34.7)</td>
<td></td>
</tr>
<tr>
<td>Orphan status</td>
<td>Parents alive</td>
<td>369 (71.1)</td>
<td>150 (28.9)</td>
<td>519 (61.4)</td>
<td>0.547</td>
</tr>
<tr>
<td></td>
<td>One Parent dead</td>
<td>204 (73.0)</td>
<td>76 (27.0)</td>
<td>280 (33.1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Both parent dead</td>
<td>36 (78.3)</td>
<td>10 (21.7)</td>
<td>46 (5.4)</td>
<td></td>
</tr>
<tr>
<td>Age of first sex</td>
<td>&lt;15</td>
<td>18 (78.3)</td>
<td>5 (21.7)</td>
<td>23 (2.6)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>≥15</td>
<td>591 (71.9)</td>
<td>231 (28.1)</td>
<td>851 (97.4)</td>
<td></td>
</tr>
<tr>
<td>Sexual partners</td>
<td>1</td>
<td>334 (73.1)</td>
<td>123 (26.6)</td>
<td>457 (793)</td>
<td>0.041</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>51 (63.0)</td>
<td>30 (37.0)</td>
<td>81 (14.1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>≥3</td>
<td>32 (84.2)</td>
<td>6 (15.8)</td>
<td>38 (6.6)</td>
<td></td>
</tr>
<tr>
<td>Lifetime sexual partners</td>
<td>1</td>
<td>211 (74.8)</td>
<td>71 (25.2)</td>
<td>282 (33.4)</td>
<td>0.207</td>
</tr>
</tbody>
</table>
## Results

Table 2: Estimated incidence of SRH outcomes.

<table>
<thead>
<tr>
<th>SRH outcomes</th>
<th>Prevalence, %</th>
<th>(95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy</td>
<td>22.5</td>
<td>(19.9 - 25.4)</td>
</tr>
<tr>
<td>Contraceptive use</td>
<td>28.5</td>
<td>(25.6 - 31.6)</td>
</tr>
<tr>
<td>HIV</td>
<td>3.8</td>
<td>(2.9 - 4.9)</td>
</tr>
</tbody>
</table>

Table 3: Logistic regressions examining the association of SRH outcomes with migration status.

<table>
<thead>
<tr>
<th>SRH outcomes</th>
<th>OR (95% CI)</th>
<th>p-value</th>
<th>AOR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy</td>
<td>1.38 (0.78 – 2.42)</td>
<td>0.27</td>
<td>4.30 (1.11 – 16.49)</td>
<td>0.03*</td>
</tr>
<tr>
<td>Contraceptive use</td>
<td>0.42 (0.24 – 0.86)</td>
<td>0.02*</td>
<td>0.46 (0.25 – 0.87)</td>
<td>0.01*</td>
</tr>
<tr>
<td>HIV</td>
<td>1.12 (0.62 – 2.03)</td>
<td>0.70</td>
<td>4.91 (1.04 – 23.23)</td>
<td>0.04*</td>
</tr>
</tbody>
</table>

Each line corresponds to a separate multivariable model with the indicated outcome and migration as a predictor [reference group = not migrated].

- Analysis were adjusted for young woman’s age, currently at school, education level, early sex debut, partners in life time, orphan status and primary caregiver education level.
- Analysis were adjusted for young woman’s age, currently at school, early sex debut, partners in life time, orphan status and primary caregiver education level.
- Analysis were adjusted for partners in life time, recent partnership, contraceptive use, condom use, primary caregiver education level.

*p-value < 0.05.
Discussion

• Effect of migration observed:
  – Pregnancy and HIV
  – Contraceptive use

• Limitations: Low HIV cases resulted in a small sample size:
  – Loss of precision: wider CIs

• A better understanding of effect of migration on SRH needs further research.
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