Correlates of adherence to oral pre-exposure prophylaxis (PrEP) and the dapivirine ring among adolescent girls and young women (AGYW) participating in the MTN-034/REACH trial

Kenneth Ngure MPH, PhD
Jomo Kenyatta University (JKUAT), Nairobi, Kenya
University of Washington, Seattle, WA, USA

ID: 1308
Disclosures

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Background

- Adolescent girls and young women (AGYW) in sub-Saharan Africa have high risk of HIV acquisition.

- Oral pre-exposure prophylaxis (PrEP) and the monthly dapivirine vaginal ring (ring) are effective HIV prevention options, however many AGYW face challenges using them consistently.

- We evaluated correlates of adherence to PrEP and the ring among AGYW in the MTN-034/REACH study.
Enrolled 247 AGYW aged 16-21 years in South Africa, Uganda and Zimbabwe
Identifying Adherence Correlates

Potential adherence correlates assessed quarterly via self-report
• Individual level
• Interpersonal level
• Community level
• Study-related
• Product-related

From Mensch, et al 2012
Adherence Measurement

**Ring adherence**
- Estimated dapivirine release based on residual drug (RD) levels in returned rings

**High adherence**
- RD ≥ 4.0mg
- Consistent with continuous 28 days of use/month

**Oral PrEP adherence**
- Measured tenofovir diphosphate (TFV-DP) levels in dried blood spots (DBS)

**High adherence**
- TFV-DP ≥ 700fmol/punch
- Consistent with ≥ 4 doses/week

We tested associations between correlates and high adherence using generalized estimating equations, controlling for randomization and site, with interaction terms between product and 1) study period and 2) correlate measures.
## Baseline Characteristics – Demographics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total (N=247)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age &lt;18 years</td>
<td>84 (34%)</td>
</tr>
<tr>
<td>Not married</td>
<td>214 (87%)</td>
</tr>
<tr>
<td>Earns own income</td>
<td>53 (21%)</td>
</tr>
<tr>
<td>Proportion with any children</td>
<td>99 (40%)</td>
</tr>
<tr>
<td>Completed Secondary School</td>
<td>212 (86%)</td>
</tr>
<tr>
<td>Food insecure</td>
<td>62 (25%)</td>
</tr>
<tr>
<td>Risk perception (Somewhat/very worried about HIV)</td>
<td>100 (41%)</td>
</tr>
</tbody>
</table>
Baseline Characteristics – Mental Health and Sexual Behavior

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total (N=247)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous drinking (AUDIT-C ≥ 3)</td>
<td>97 (39%)</td>
</tr>
<tr>
<td>Depression indicated (CESD-10 ≥12)</td>
<td>91 (37%)</td>
</tr>
<tr>
<td>Primary partner has/may have other partners</td>
<td>167 (68%)</td>
</tr>
<tr>
<td>Vaginal sex at least weekly in the past 3 months</td>
<td>107 (43%)</td>
</tr>
<tr>
<td>More than 1 sex partner in past 3 months</td>
<td>90 (36%)</td>
</tr>
<tr>
<td>Transactional sex in the past 6 months</td>
<td>66 (27%)</td>
</tr>
</tbody>
</table>
Proportion of Participants with High Adherence
## Correlates of Oral PrEP Adherence

<table>
<thead>
<tr>
<th>Measures</th>
<th>Adjusted Risk Ratio&lt;sup&gt;a&lt;/sup&gt;</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchanged sex in past 6 months</td>
<td>0.87</td>
<td>(0.77, 0.98)</td>
<td>0.02</td>
</tr>
<tr>
<td>Primary partner &gt;4 years older</td>
<td>1.18</td>
<td>(1.01, 1.37)</td>
<td>0.04</td>
</tr>
<tr>
<td>Rated product highly acceptable</td>
<td>1.21</td>
<td>(1.08, 1.35)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Crossover period (vs choice period)</td>
<td>1.23</td>
<td>(1.06, 1.42)</td>
<td>0.01</td>
</tr>
</tbody>
</table>

<sup>a</sup> Controlled for randomization arm and study site
Correlates of Ring Adherence

<table>
<thead>
<tr>
<th>Measures</th>
<th>Adjusted Risk Ratio(^a)</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unstably housed (e.g., no access to running water)</td>
<td>1.17</td>
<td>(1.04, 1.31)</td>
<td>0.01</td>
</tr>
<tr>
<td>Disclosure to male family member</td>
<td>1.11</td>
<td>(1.01, 1.22)</td>
<td>0.03</td>
</tr>
<tr>
<td>Experienced social benefit</td>
<td>1.19</td>
<td>(1.01, 1.39)</td>
<td>0.03</td>
</tr>
<tr>
<td>Crossover period (vs choice period)</td>
<td>1.11</td>
<td>(1.01, 1.22)</td>
<td>0.03</td>
</tr>
</tbody>
</table>

\(^a\) Controlled for randomization arm and study site
Factors not Significantly Associated with Oral PrEP or Ring Adherence

- Age
- Education
- Currently in school
- Income
- Who she lives with
- Food security
- Hazardous drinking
- Possible depression
- Risk perception
- Frequency of sex
- Number of partners
- Condom use

- Partnership status & duration
- Thinking partner may have other partners
- Financial support from partner
- IPV or non-partner sexual violence
- Disclosure to partner, female family, or friends
- Perceived community awareness of PrEP
- Perceived community stigma around PrEP
Conclusions

• Roughly half of participants were able to use each of the products consistently in any given month.

• Different factors were associated with adherence for each product
  – Supports benefit of offering multiple options to meet different needs

• All associations were modest in scale (but significant); need additional research to identify strong drivers of oral PrEP or ring adherence
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Co-authors

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The MTN-034/REACH Management Team