Patterns of HIV prevention behavior and the self-perception of HIV risk among adolescent men who have sex with men and transgender women in Brazil: a latent class analysis

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Introduction

• Adolescents and young men in Brazil face a disproportionate HIV incidence ratio, which is increasing especially among those who are ≤ 25 years old.

• Self-perception of HIV risk is an important indicator of HIV prevention choices.

• HIV combination prevention is still limited among adolescents from key-populations.

OBJECTIVE - We aimed to identify patterns of HIV prevention behavior among adolescent MSM and TGW in Brazil.
Methods

- PrEP1519 was a prospective, multicenter, demonstration cohort study of daily oral PrEP among adolescents men who have sex with men (AMSM) and transgender women (ATGW) aged 15 to 19 years old implemented in three large Brazilian capital cities (Belo Horizonte, Salvador, and São Paulo) (Dourado, 2023).

- Information on socio-demographic characteristics, sexual behavior and HIV prevention was obtained through face-to-face interviews using standardized questionnaires.

- Online and face-to-face demand creation strategies were conducted by peer educators to reach AMSM and ATGW.
PrEP1519 Implementation Model: recruiting, enrolling and linking adolescents MSM and TGW to PrEP

**Demand Creation**
- Communication material (cards, posters, PrEP emoji's, PrEPO mascot, Comics, Road Map)
- Boosting on social media
- Kits for influencers.

**Peer educators –PE- working at youth venues**
- Schools
- Community Mobilization
- National Health System

**Off-line**
- Peer educators working in online platforms, hook-up apps; WhatsApp
- Amanda Selfie - a chatbot
- Boosting social media
- Digital influencers

**On-line**
- Peer educators working at youth venues
- Schools
- Community Mobilization
- National Health System

**Face-to-face services**
- HIV (RT 4th generation) and STI testing;
- Linkage to care and treatment if screen positive for HIV
- Counselling and screen for mental health
- Psychological support;
- Medical, nursing care, and social work support;
- PrEP + condom dispensation;
- Post-exposure prophylaxis - PEP
- STI diagnoses and treatment POC
- Referrals to vaccination to NHS

**Telehealth services**
- Telehealth by health providers;
- Clinical, laboratory and behavioral questionnaires - online interview;
- PrEP + condom + HIV self-testing sent to their preferred address;
- Online consultations to inform STI diagnosis and offer care; and to monitor PrEP continuation and adherence;

**Mixed model of services delivery**

**PrEP Clinics**

**PrEP1519 Implementation Model**

**WHAT**
- Reaching and engaging adolescents in PrEP and HIV testing

**WHO**
- How

**WHERE**
- On-line
- Off-line

**Reaching and engaging adolescents in PrEP and HIV testing**
Methods

• For this cross-sectional analysis, we included 1,441 adolescents enrolled in the cohort from February 2019-February 2023.

• Latent class analysis (LCA) grouped adolescents with similar patterns of HIV-preventive behaviors. And which group were associated with self-perception of HIV risk.

• Further, we analyzed sociodemographic factors associated to each pattern using LCA with covariates.
• Indicator variables for LCA of HIV preventive behaviors:

- Use of PEP (10.1%)
- Condom use (18.9%)
- HIV testing between partners (8.6%)
- Use of lubricants (34.0%)
- Non penetrative sex (19.3%)

### Values for LCA Models

<table>
<thead>
<tr>
<th></th>
<th>2 classes</th>
<th>3 classes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Akaike - AIC</td>
<td>5.081</td>
<td>5.058</td>
</tr>
<tr>
<td>Bayesian - BIC</td>
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<td>5.190</td>
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<tr>
<td>Entropy</td>
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<td>0.3</td>
</tr>
</tbody>
</table>
Results

• Most participants were AMSM (91.2%), aged 18 to 19 years (74.5%), had brown or black skin color (71.5%), and had more than 12 years of schooling (54.8%).

• Two distinct groups came out and were characterized by:

**Class 1: Fewer preventive behavior**
(N=1,108; 76.9%)

Characterized by infrequent condom use (6.6%), having non-penetrative sex (15.1%), greater use of lubricant (36.9%), performing an HIV test with a partner (6.4%), and PEP use (16.0%);

**Class 2: Greater preventive behavior**
(N=333; 23.1%)

Characterized by frequently condom use (40.3%), having non-penetrative sex (27.5%), infrequent use of lubricants (28.3%), performing an HIV test with a partner (12.7%), and nobody use PEP (0.0%).
### Results

<table>
<thead>
<tr>
<th>Sociodemographic Covariates</th>
<th>Fewer HIV Prevention Behavior</th>
<th>OR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>15 to 17 yo</td>
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<td>1</td>
<td></td>
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<tr>
<td>18 and 19 yo</td>
<td></td>
<td>0.95</td>
<td>0.42</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AMSM</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>ATGW</td>
<td></td>
<td>0.97</td>
<td>0.36</td>
</tr>
<tr>
<td><strong>Schooling</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary to high school</td>
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</tr>
<tr>
<td>College education</td>
<td></td>
<td>0.68</td>
<td>0.39</td>
</tr>
<tr>
<td><strong>Race/Skin color</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Blacks and brown</td>
<td></td>
<td>1.31</td>
<td>0.66</td>
</tr>
<tr>
<td><strong>HIV risk perception</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low risk</td>
<td></td>
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<tr>
<td>Moderate to high risk</td>
<td></td>
<td>7.47</td>
<td>2.02</td>
</tr>
</tbody>
</table>
Conclusions

• Fewer HIV preventive behavior was used by adolescent MSM and TGW.

• Perception of an HIV risk was associated with fewer use of the preventive behavior analyzed.

• Oral and injectable long acting PrEP is highly accepted among sexual minority adolescents and should be offered as a choice in a large scale.
**Acknowledgments - teams**

**SALVADOR**
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- Priscilla Caires
- Fabiane Soares
- Carlos Jefferson
- Joilson Palm
- Maria Elia Alderete
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- Sulian Silva Pedreira
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**SÃO PAULO**
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- Ana Paula Silva
- Érica Dumont
- Maria José Duarte
- Júlio Andrade
- Maria Cristina Abreu

**BELO HORIZONTE**
- Dirceu Greco
- Alexandre Grangeiro
- Fabiane Soares
- Carlos Jefferson
- Joilson Palm
- Maria Elia Alderete
- Thaís Aranha Rossi
- Sulian Silva Pedreira
- Nathália Suzart
- Beo Leite
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Thanks to sponsors and many others on the PrEP1519 Choices team.
Funding: Thanks to the generous support of Unitaid

Thank you!