Point-of-Care HIV testing in Cali, Colombia: Experience and Expectations

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Population: 45 million
Green shadow: area of influence of Cali.
Social disparities are pronounced
Affecting especially people of African
descent, which constitutes 40% of the
population of Cali

Population: ~2.5 million
Agricultural industry
Sugar cane products
Main city of the Southwest of Colombia
HIV statistics in Colombia

- Prevalence: 0.7%
- Number of people living with HIV: 170,000
- % of people ever tested for HIV: 16%
- Health service:
  - Contributive (formal employment)
  - Subsidized
  - None
- Unemployment: 12.6%
- Informal employment: 55-60%
- Frequent transitions between formal, informal employment and unemployment cause gaps in health coverage.

HIV PREVENTION, 2005 – 2007

HIV Testing in Vulnerable Populations

(Poster No. MOPE0495 – AIDS IAS Conference, Mexico D.F. 2008)

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BACKGROUND

A cross-sectional study that evaluated socio-demographic characteristics, HIV testing, HIV knowledge, and risk behaviours for HIV/AIDS, was performed in order to understand the factors that increase vulnerability for HIV infection in Cali, Colombia.
METHODS

Between 2005-2007, 4090 persons gave informed consent and received HIV pre and post-test counselling.

Socio-economic characteristics, behavioural risk factors and HIV knowledge was assessed. HIV testing was performed (by rapid test and Western Blotting).

Participants were categorized as persons of lower socio-economic status (LES); employed workers (EW), and university students of medium-high (MHUS) socio-economic status.

Frequencies, statistical significance (p<0.05) and confidence intervals (95% CI) were obtained.
## Results

### Demographics.

- Average age of the total population is 29.8±12.1; Men (53.3%)

<table>
<thead>
<tr>
<th>Groups</th>
<th>Lower socio-economic status</th>
<th>Workers</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average age,</td>
<td></td>
<td>38.6±13.7(SD)</td>
<td>36.5±8.5(SD)</td>
</tr>
<tr>
<td>years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>43%</td>
<td>36%</td>
<td>53%</td>
</tr>
<tr>
<td>Male</td>
<td>57%</td>
<td>64%</td>
<td>47%</td>
</tr>
<tr>
<td>Health system coverage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>61%</td>
<td>100%</td>
<td>95%</td>
</tr>
<tr>
<td>No</td>
<td>39%</td>
<td>0%</td>
<td>5%</td>
</tr>
<tr>
<td>Overall (n)</td>
<td>1217 (30%)</td>
<td>899(22%)</td>
<td>1940(48%)</td>
</tr>
</tbody>
</table>

SD = Standard Deviation
Prevalence of HIV+

HIV+ prevalence was higher among the lower socio-economic status group, compared with employed workers (p=0.0001), and with students (p<0.00001); no differences were observed between workers and students (p=0.8393).

General Prevalence of HIV+: 0.7% (CI_{95%}:0.5%-1.0%).
Individuals of lower socio-economic status, had higher average number of sexual partners in the last 2 years (2.9; 1.6; 2.5; p<0.010), and lower consistent use (always) of condoms (p<0.013), compared with the other two groups.

Consistent (always) use of condoms in sexual practices.

- Lower socio-economic status: 10%
- Employed workers: 19%
- University students: 18%
People from the lower socio-economic group had more frequent self-reported history of sexually transmitted diseases (STDs) in the past, compared with students and workers ($p<0.001$).

![Bar chart showing record of sexually transmitted diseases](chart.png)

Overall, most (81.7%) of the people in the three groups had never had previous HIV testing, without differences.
Average time of sexually active life.

Although the three groups had similar age for their first sexual intercourse, LES and EW were older than university students.
Individuals of lower socio-economic status had poorer HIV knowledge (as self-reported), compared with employed workers ($p < 0.0001$), and with students ($p = 0.000475$); there was also poorer HIV knowledge among students, than among workers ($p = 0.0003$).
Inside the lower socio-economic status group there were differences between HIV+ and HIV- individuals, only for history of STDs (p<0.001) but not for average age, health system coverage, sexual active life, HIV knowledge, tattoos/piercing, average number of sexual partners in the last two years, and consistent condom use.

Record of STDs in the lower socio-economic status group

<table>
<thead>
<tr>
<th>History of STDs</th>
<th>Diagnosed with HIV infection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HIV+</td>
</tr>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Yes</td>
<td>12</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
</tr>
</tbody>
</table>

Prevalence risk ratio 4.72%/1.34=3.52
CONCLUSIONS

• Generalized lack of HIV/AIDS knowledge and very low consistent condom use in all groups.

• HIV+ prevalence were higher in persons of lower socio-economic condition.

• Prevention efforts, and HIV testing should focus on populations with low socio-economic status and/or STDs.
ACTIVE HIV +/- SYPHILIS TESTING IN VULNERABLE POPULATIONS
CALI-COLOMBIA, 2008-2009
HIV PREVENTION IN LOW SOCIOECONOMIC STATUS POPULATIONS
Lower socioeconomic status definition:

The LSE corresponded to individuals with any of the following housing characteristics:

a) Inadequate (poor quality) walls, floors and ceilings;
b) Lacking one or more public services such as electricity or water;
c) Overcrowded conditions (three or more persons per room);
d) More than 3 dependent persons; and
e) Head of the family with less than 2 years of education and living in houses with one or more-children of school age who does not attend school.
Prevalence of HIV+

- Male: 2.1%
- Female: 0.3%
- Overall: 0.8%
- P<0.001

Prevalence of Syphilis+

- Male: 8.8%
- Female: 6.4%
- Overall: 7.0%
- P=0.054
HIV frequency, and socio-demographic characteristics, history of sexually transmitted diseases (STDs) and risk behaviours, in asymptomatic HIV voluntary testing participants of low socio-economical status (SES) in Popayán, Colombia (2008-2009).

Sub analysis in 358 participants of Active HIV +/- Syphilis Testing In Vulnerable Populations, 2008-2009.
(Poster No. TUPE0433 - AIDS IAS Conference, Vienna 2010)

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## Results

### Socio-Demographics

<table>
<thead>
<tr>
<th></th>
<th>Mean ± Sd</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average age, years</strong></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>33.5 ± 10.2</td>
</tr>
<tr>
<td>Female</td>
<td>33.4 ± 10.3</td>
</tr>
<tr>
<td>Male</td>
<td>33.6 ± 10.1</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>Percent</td>
</tr>
<tr>
<td>Female</td>
<td>66%</td>
</tr>
<tr>
<td>Male</td>
<td>34%</td>
</tr>
<tr>
<td><strong>Educational level</strong></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>4%</td>
</tr>
<tr>
<td>Elementary/Secondary Education</td>
<td>84%</td>
</tr>
<tr>
<td>Technical /University</td>
<td>12%</td>
</tr>
<tr>
<td><strong>With a stable partner</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>60%</td>
</tr>
<tr>
<td>No</td>
<td>40%</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>49%</td>
</tr>
<tr>
<td>Not employed</td>
<td>7%</td>
</tr>
<tr>
<td>Home/study</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Health system coverage</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>52%</td>
</tr>
<tr>
<td>No</td>
<td>48%</td>
</tr>
</tbody>
</table>
Participants aged 29-37 had the highest HIV seroprevalence versus age < 29 (p=0.025).
HIV Seroprevalence by stable partner

Those without a stable partner had greater HIV seroprevalence (p=0.029)

HIV Seroprevalence by alcohol consumption

Those with history of more than five drinks in 2 consecutive hours had greater HIV seroprevalence than those who did not drink (p=0.012).

No other socio-demographic characteristics, history of STDs or risky behaviours were associated with increased HIV seroprevalence.
Canada-Colombia workshops in HIV AIDS (2009, 2010)

• Information exchange between Colombian researchers, government agencies representatives, students, and Canadian researchers:
  – Current strategies for testing are likely not reaching the highest risk populations.
  – Stigma and social discrimination is a fundamental barrier for LGTB
  – We do not know yet how to better reach high risk and invisible populations.
Obstacles

• Cost: $20 or more is expensive in Colombia
• Not apparent interest in early testing
• Little experience with point-of-care testing (except in pregnant women).
• Concern about how reliable could it be if testing is not done by laboratory technicians.
• Uncertainty about the capacity of the health system to care for the newly diagnosed.
Conclusions

• Rapid testing would very likely be useful
• We do no yet know the best way to implement its use in Colombia.
• Guidelines for its use along with HIV counseling are needed.
• Research with high risk groups will likely guide pilot projects and initial attempts to implement testing.
Current work

• Several LGBT communities in Cali have been contacted.
• Ongoing efforts to use community-based research approaches to inform us on factors relevant for point of care testing:
  – Risk groups
  – Venues
  – Preferences on the type and strategies for HIV testing
  – Privacy and confidentiality issues
  – Other risks for people that could become tested

Canada-Colombia Collaboration against HIV
http://www.ccc-hiv.org/
Current work

• Contact with the Secretary of health of the City of Cali, CLS and Canadian researchers
  – Identify the health care institutions where most STIs are diagnosed.
  – Design of contact tracing strategies
  – Use geographic information systems and social network analysis to identify risk areas and groups
  – Evaluation of patient-oriented outcomes for rapid HIV tests.
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