Preventing Mother to Child Transmission (PMTCT) in South Africa

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## South Africa

### Population
- People living with HIV: 5.6 million
- HIV prevalence: 17.8%
- Women aged 0 - 14 living with HIV: 3.3 million
- Children living with HIV: 330 thousand
- Annual AIDS Deaths: 314 thousand
- Orphans due to AIDS aged 0 – 17: 1.9 million
- Life expectancy: 53
• Highest HIV/AIDS rates among women worldwide
  • ~35 - 40% diagnosed with HIV/AIDS during pregnancy
• Reduced Condom Use normally associated with pregnancy
• HIV- incidence is 4x higher for women in late stage pregnancy
  • 27.9% risk of seroconversion during pregnancy
  • Transmission to men doubles with a pregnant partner (Mugo et al, 2011, AIDS)

• Transmission to women behaviorally linked, to men, biologically linked
Dynamics of risk within Couples

Gender-based power dynamics
Social norms

HIV Disclosure
- Threat of IPV pregnancy
- Loss of $ support, abandonment/rejection
- Social discrimination

Sexual Negotiation

Condoms as birth control
Condoms in & in steady relationships

Increased risk to mother, male partners & neonate
Reduced engagement in antenatal care
Study Aims

- Enhance male involvement during antenatal care among pregnant women living in rural north-eastern South Africa
  - Reduce unprotected sex
  - Enhance sexual communication and HIV knowledge
  - Increase potential for HIV disclosure and HIV testing by male partners

- Participants (n = 239 couples)
  - Women: 24 – 30 weeks pregnant
  - SA Protocol required: HIV Counselling & Testing (HIV +/-)
  - Enrolled women with male partners

- Recruitment sites: 12 Antenatal Clinics (ANCs) in South Africa
  - Gert Sibande and Nkangala districts of Mpumalanga provinces
  - HIV prevalence rates ranging from 15.4% - 36.8%

- Randomized by site: 6 Intervention; 6 control (similar rates, populations)
**Intervention: Partner Plus**

- **Intervention:** 4 weekly, 90 - 120 minute gender concordant group sessions
- Couples HIV risk reduction and medication adherence intervention designed to enhance uptake of PMTCT protocol by increasing male involvement
- **Plus PMTCT protocol**
  - HIV, STI review
  - PMTCT protocol review
  - Adherence training
  - Sexual risk reduction training
    - male and female condoms, multiple partners,
  - Cognitive Behavioral skill training to enhance communication
  - Conflict resolution training & IPV prevention
  - Disclosure
  - Gender-relevant issues (Male circumcision, substance use)

- **Control:** 4 time-matched sessions (health videos on diabetes, hypertension, alcohol use and exercise)
- **Plus PMTCT Protocol**
All pregnant women should:

- Be encouraged to book early into antenatal care, as soon as they believe they are or are confirmed to be pregnant.
- Receive routine antenatal care, including micronutrient supplementation.
- Be offered information on the availability of PMTCT interventions during all health care consultations.
- Be routinely offered HIV counseling and testing and encourage partner or spouse testing.
- Be encouraged to involve partners or spouses in caring for the pregnancy.
- Be counseled on safer sex and provided with condoms.
- Be counseled on safe infant feeding options and assisted in making an appropriate feeding choice.
- Be supported on the choice of infant feeding at all times.
• **If seropositive, all pregnant women should:**
  Receive routine antenatal care, including iron and folate supplementation.
  Be offered information on the availability of PMTCT interventions at all health care consultations, and not only when visiting the antenatal clinic.
  Be clinically staged and have a CD4 cell count taken on the same day as the HIV test is done, and preferably at the first ANC visit (or at the earliest opportunity).
  Be screened for TB, in line with the BANC.
  Be screened and treated swiftly for syphilis and other STIs, in line with BANC.
  Receive regimens to prevent mother-to-child transmission of HIV (PMTCT regimen) OR lifelong ART if CD4 cell count <350 cells/mm3 (ART regimen).
  Be offered appropriate PCP and TB prevention prophylaxis.
  Be counseled on safer sex, family planning, postnatal contraception and partner testing.

• **Women who start lifelong ART in their pregnancy** should be monitored and managed, where possible, by the same provider in the same facility. They should receive follow-up from an antenatal healthcare worker until at least 6 weeks postpartum, before being referred for ongoing care to an appropriate facility.
Demographics Males & Females:
- Mean = 28 years of age
- Mean = 1 child
- Mode = Unemployed (58%)
- Median = No income (49%)
- Median = ≤ 12 years education (53%)
- Mode = Rural residence (71%)

Sample: Baseline

Men were older, more often employed, better educated, and earned more money than women.

- Unprotected sex (50%) both men and women
- Low (17%) – Moderate (29%) HIV/PMTCT knowledge
- Multiple partners: 10% (Women) & 18% (Men)
- No information on partner HIV status: 19% (Women) & 2% (Men)
- Incorrect information on partner HIV status: 13% (Women) & 16% (men)
- Intimate Partner Violence: 45% of couples (> 1 act in last month)
- Verbal aggression: 77% couples (> 1 act in last month)
Post-Intervention Outcomes

- Rates of unprotected sex decreased
  - 32% (intervention) and 83% (control)
  - Intervention effect estimate: 51% reduction in the intervention compared to control
  - Decreased among participants in all conditions except among HIV- men

- Accurate disclosure of HIV serostatus
  - Increased among men in both conditions
  - Did not increase among women

- HIV-related knowledge
  - Increased in the intervention condition
  - Decreased in the control condition

- Negotiation as conflict resolution strategy
  - Increased among intervention condition participants
  - Did not increase among control condition participants

- Sex with partners outside the primary relationship
  - Decreased in both conditions
HIV Testing & Seroconversion

**Baseline**
- **F**: 32% HIV+ (n = 76)
- **M**: 21% HIV+ (n = 38)
  - 76% elected test

**Follow-up**
- 82 HIV+
- 44 HIV+
  - 82% elected test

11% percent of couples were serodiscordant

Follow-up HIV Testing @ 32 weeks pregnancy

**Intervention**
- 0% sero-conversion (n = 0 of 82 negative women)
  - 15% (n = 12) of women did not elect re-test

**Control**
- 7.4% seroconversion (n = 6 of 81 negative women)
  - 20% (n = 16) of women did not elect re-test
Challenges & Recommendations

- **Reduced sexual risk behaviors**
  ... with the exception of HIV seronegative men
  - Seronegative male partners: especially vulnerable

  - **Male engagement vs. involvement during antenatal care**
  - **More intensive, targeted, sexual risk interventions**?

- **Disclosure**
  ... increased among men but not women
  - “Women may have more to lose”
  - IPV increases likelihood of non-disclosure

  - Lack of male *engagement* in antenatal care => reduces mothers engagement in care & adherence to PMTCT protocol

  - **Facilitate the process of mutual disclosure with couples during this vulnerable period**?
PMTCT Protocol Post Partum

- HIV infected Mother on AZT regimen or no treatment
  - At onset of labour
  - sdNVP
  - AZT 3hrly till delivery
  - Post Delivery
  - Stat TDF + FTC

- Mother on lifelong ART
  - Continue ART regimen throughout labour
    - Infant: NVP for 6 weeks
    - Mother: Continue on lifelong ART

- Infant: NVP for 6 weeks or for duration of breast feeding
  - Mother: Assess need for lifelong ART before discharge
Overall Post-Partum outcomes
Mpumalanga Province Clinics

- Clinic post-partum rates of MTCT
  - 6 weeks: 5 – 20 %
- Clinic post-partum rates of MTCT
  - 6 months: an ADDITIONAL 5 – 20 %

Preliminary Outcomes: Infant Serostatus

<table>
<thead>
<tr>
<th></th>
<th>Total = 80</th>
<th>Intervention = 36</th>
<th>Control = 44</th>
</tr>
</thead>
<tbody>
<tr>
<td>Died/Miscarried</td>
<td>13</td>
<td>7 (21%)</td>
<td>6 (14%)</td>
</tr>
<tr>
<td>HIV Negative</td>
<td>58</td>
<td>25 (76%)</td>
<td>33 (79%)</td>
</tr>
<tr>
<td>HIV Positive</td>
<td>4</td>
<td>1 (3%)</td>
<td>3 (7%)</td>
</tr>
<tr>
<td>Pending</td>
<td>5</td>
<td>3</td>
<td>2</td>
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</tbody>
</table>
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  Be routinely offered HIV counseling and testing and encourage partner or spouse testing.
  Be encouraged to involve partners or spouses in caring for the pregnancy.
  Be counseled on safer sex and provided with condoms.
  Be counseled on safe infant feeding options and assisted in making an appropriate feeding choice.
  Be supported on the choice of infant feeding at all times.
Infants tested for presence of ARVs in blood

**Intervention**
- 14 mothers
  - 11 NVP
  - 3 none
- 6 drug
- 1 none
- 6 drug
- 1 none

**Control**
- 14 infants
  - 10 NVP
  - 4 none
- 5 drug
- 2 none
- 4 drug
- 3 none
Preliminary Results: Feeding Practices

6 exclusively breast feeding

- 1 formula
- 5 water
- 5 porridge

22 exclusively formula feeding

- 1 breast feeding
- 1 porridge
- 22 water

3 mixed feeding

- breast feeding
- formula feeding
Preliminary Results: Feeding Practices

- Challenges: Post-partum Feeding Practices
  - Confusion surrounding safe feeding
  - Hunger

Graphs showing feeding practices:
- In the last 24 hours what have you fed your baby?
- Pie chart showing percentages for Exclusive Breast Feeding (71%), Exclusive Formula Feeding (19%), and Combination Breast & Formula (9%).
**Attendance**

- **Conditions comparable**
  - Group session attendance
  - Antenatal clinic visit attendance
  - Post-natal clinic visit attendance

- **Number of clinic visits by women over the duration of the pregnancy**
  - Range: 2 - 10 Visits
  - < 50%: 2 – 5 visits
  - 55%: 6 - 10 visits

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**Evaluating Male Involvement**

![Bar chart showing clinic visits with female partner]
Challenges & Recommendations

- Reduced sexual risk behavior
- Disclosure
- Infant Feeding Practices
  - Confusion regarding safe feeding protocol
  - Coping with infant hunger and traditional feeding practices
- Male engagement vs. Male involvement
- Stigma
- Intimate Partner Violence
- Long term PMTCT protocol adherence & retention in care
- Family planning and safer contraception practices