Sustained High HIV Incidence in Young South African Women: Behavioral and Structural Factors and Emerging Intervention Approaches

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Overview of Sustained High HIV Incidence Project

- **Context of Sustained High HIV Incidence in Young Women**
  - Continued high incidence as overall levels of HIV infection declined
  - Young women as ‘key population’ for intervention
  - South Africa as a Case Study

- **Emerging Intervention Approaches targeting Young Women**
  - Behavioral, social and structural interventions in combination with PrEP
## Global AIDS Overview

<table>
<thead>
<tr>
<th>Number of people living with HIV</th>
<th>Total</th>
<th>35.0 million [33.2 million – 37.2 million]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults</td>
<td>31.8 million [30.1 million – 33.7 million]</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>16.0 million [15.2 million – 16.9 million]</td>
<td></td>
</tr>
<tr>
<td>Children (&lt;15 years)</td>
<td>3.2 million [2.9 million – 3.5 million]</td>
<td></td>
</tr>
<tr>
<td>Category</td>
<td>Number</td>
<td>Range</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Total</td>
<td>2.1 million</td>
<td>[1.9 million – 2.4 million]</td>
</tr>
<tr>
<td>Adults</td>
<td>1.9 million</td>
<td>[1.7 million – 2.1 million]</td>
</tr>
<tr>
<td>Children (&lt;15 years)</td>
<td>240,000</td>
<td>[210,000 – 280,000]</td>
</tr>
</tbody>
</table>
Estimated number of adults and children newly infected with HIV | 2013

- Middle East & North Africa: 25,000 (14,000 – 41,000)
- Sub-Saharan Africa: 1.5 million (1.3 million – 1.6 million)
- Eastern Europe & Central Asia: 110,000 (86,000 – 130,000)
- Latin America: 94,000 (71,000 – 170,000)
- Caribbean: 12,000 (9,400 – 14,000)
- Asia and the Pacific: 350,000 (250,000 – 510,000)
- North America and Western and Central Europe: 88,000 (44,000 – 160,000)

Total: 2.1 million (1.9 million – 2.4 million)
About 6,000 new HIV infections a day in 2013

- About 68% are in Sub Saharan Africa
- About 700 are in children under 15 years of age
- About 5,200 are in adults aged 15 years and older, of whom:
  - Almost 47% are among women
  - About 33% are among young people (15-24)
- Young women aged 15-24 are 2-3 times more likely than men of the same age to be HIV infected
  - In South Africa: 5-8 times more likely
Why Can’t We Bring Down The Number Of New HIV Cases?

December 1, 2016 · 12:01 AM ET

JASON BEAUBIEN

While the HIV/AIDS epidemic no longer looks as menacing as it did in the 1980s and ’90s, efforts to stop the spread of the disease have hit a brick wall.

The number of people getting infected with HIV each year peaked in 1997 at about 3.5 million. Prevention efforts — including HIV education campaigns, testing programs and the distribution of billions of condoms — have slashed that figure dramatically. But progress stalled around 2010. Since then the world has tallied about 2 million new cases a year with no end in sight.

Rate Of New HIV Infections, Once In Sharp Decline, Is Leveling Off

The number of new HIV cases worldwide each year peaked at 3.5 million in 1997 and fell to 2.4 million within a decade. But the rate of change has slowed since 2010, falling an average of 1.4 percent each year.
Sustained High HIV Incidence Project

2015 review: context of sustained HIV incidence among 15-24 year old women in South Africa

Review of the literature, plus primary data from two locations in South Africa:
- Rural KwaZulu-Natal
- Urban Western Cape (Cape Town township)

Partnership for the Next Generation of HIV Social Science [R24 HD077976]
Domains

- Gendered Context of HIV Risk
- Developmental and Biological Factors
- Sexual Risk Behaviors
- Reproductive Health and HIV Risk
- Social and Contextual Factors
- Intervention Approaches

**Aim:** To provide a comprehensive and integrated review of how these factors influenced sustained high incidence rates
Sustained High HIV Incidence in Young Women in Southern Africa: Social, Behavioral, and Structural Factors and Emerging Intervention Approaches

Abigail Harrison1 · Christopher J. Colvin2 · Caroline Kuo1,3 · Alison Swartz2 · Mark Larie4

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Abstract Young women in southern Africa experience some of the highest incidence rates of HIV infection in the world. Across southern Africa, HIV prevalence among women increases rapidly between the teenage years and young adulthood. Adult HIV prevalence is 16.8 % in South Africa, 23 % in Botswana, 23 % in Lesotho, and 26.5 % in Swaziland. Existing research has illuminated some of the key social, behavioral, and structural factors associated with young women’s disproportionate HIV risk, including gendered social norms that advantage male power in sexual relationships and age disparities in relationships between younger women and older male partners. Important structural factors include the region’s history of labor migration and legacy of family disruption, and entrenched social and economic inequalities. New interventions are emerging to address these high levels of HIV risk in the key population of young women, including structural interventions, biomedical prevention such as PrEP, and combined HIV prevention approaches.

Keywords Women · HIV infection · Southern Africa · Structural factors · Interventions

Introduction

The sustained high HIV incidence among young women in southern Africa represents a significant and important health disparity [1]. In South Africa, the country with the world’s largest HIV-positive population, HIV infection rates are eight times higher among women in the teenage years than among young men of the same age [2]. HIV prevalence increases from 5.6 % among young women aged 15–19 to 17.4 % at ages 20–24 versus 0.7 % among males aged 15–19 years and 5.1 % of men aged 20–24 [2], a pattern that has remained relatively unchanged for over a decade [3]. Incidence of new HIV infections also differs sharply by gender: 2.5 % in 15–24-year-old women versus 0.6 % in men [2, 4]. Similar epidemiological patterns are found in much of the southern African region, including Botswana, Lesotho, Swaziland, Mozambique, Namibia, Zimbabwe, Zambia, and Malawi, all countries in which adult HIV prevalence is over 20 % [5]. KwaZulu-Natal province in eastern South Africa, which has experienced the highest rates of HIV infection throughout the country’s severe HIV epidemic, is now considered a key globe...
People living with HIV by country, 2013

- 18% South Africa
- 9% Nigeria
- 6% India
- 5% Kenya
- 4% Mozambique
- 4% Uganda
- 4% Zimbabwe
- 4% United Republic of Tanzania
- 3% Malawi
- 3% Zambia
- 2% China
- 2% Russian Federation
- 2% Brazil
- 2% United States
- 27% Remaining countries
Proportion of new HIV infections by country, 2013

- 16% South Africa
- 10% Nigeria
- 7% Uganda
- 6% India
- 5% Mozambique
- 5% Kenya
- 4% Indonesia
- 4% Russian Federation
- 3% United Republic of Tanzania
- 3% Zimbabwe
- 3% China
- 3% Zambia
- 2% United States
- 2% Cameroon
- 2% Brazil
- 24% Remaining countries
South Africa has the biggest and most high profile HIV epidemic in the world, with an estimated 6.3 million people living with HIV in 2013. In the same year, there were 330,000 new infections while 200,000 South Africans died from AIDS-related illnesses.¹
Figure 5.7
HIV prevalence among young people in sub-Saharan Africa

HIV prevalence among people 15–24 years old by sex in selected countries in sub-Saharan Africa.

<table>
<thead>
<tr>
<th>Country</th>
<th>15–19 years</th>
<th>20–24 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOTSWANA</td>
<td></td>
<td></td>
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<tr>
<td>REPUBLIC OF THE CONGO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LESOTHO</td>
<td></td>
<td></td>
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<tr>
<td>SOUTH AFRICA</td>
<td></td>
<td></td>
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<tr>
<td>ZIMBABWE</td>
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</tbody>
</table>

Source: UNAIDS 2010.
Research Questions

• Why the sustained high incidence of HIV infection in young women after more than a decade of public awareness and interventions?

• What interventions will work to reduce HIV incidence in young women?

• In the emerging context of PrEP, what interventions are needed to support biomedical prevention modalities?
Findings
1. Gendered Context of HIV Risk

- Gender inequalities:
  - Unequal social, economic and political status of men and women
  - Power imbalances in relationships and age-discrepant partnerships

- Gender-based violence
  - Links between violence, trauma, abuse and increased risk for HIV infection

- Multiple studies demonstrate gender inequalities are important risk factors for acquisition of HIV in women
  - Partnership context of risk
  - Fertility context of risk
  - Economic context
2. Developmental and Biological Factors

- Adolescence as a unique life phase: rapid development across multiple domains (physiological, psychological, emotional)

- Transition to adulthood: important needs of young adults (distinct from adolescents)

- Heightened biological susceptibility and risk
  - Emerging evidence regarding co-infections
3. Sexual Risk and Protective Behaviors

- Review of Two Key Preventive Behaviors:
  - Condom Use
  - HIV Testing and Counseling
4. Reproductive Health and HIV Risk

Family planning is an HIV prevention strategy

- Prevent unintended pregnancy; reduce women’s risk for acquiring HIV infection
  - Dual Protection/Dual Method Use

- For women living with HIV, reduce risk of onward vertical (to child) and horizontal (to partners) transmission

- Contraceptive use = better access to care and prevention
HIV Risk and Hormonal Contraception

- Southern Africa: injectable hormonal contraception widely used, especially Depo Provera

- Some evidence suggests increased risk for acquiring HIV infection in women who use Depo Provera

- Scientific debate in recent years

- No definitive answer: available data lean toward support for moderate increase in risk

- RCT is underway: Evidence for Contraceptive Options and HIV Outcomes
5. Social and Contextual Factors

- **Multiple Structures of Disadvantage**
  - Economic context: sex for money

- **Schooling and Life Aspirations**
  - School completion is seen as key to future but significant barriers exist for many young people

- **Mobility: Far-flung social and family networks**
  - Achieving future aspirations requires leaving rural area
  - High mobility for adolescents: moving between schools and families, pursuing distant relationships, seeking work

- **Social Isolation/Poor Psychosocial Outcomes**
6. Interventions

Combined Behavioral-Biomedical Approaches

- Potential for adapting existing interventions and testing in combination with PrEP

**Evidence-based Behavioral Interventions:**
- HIV Counseling and Testing
- Building knowledge and skills: school-based and/or individualized approaches
- Psychosocial Needs: Violence prevention and addressing trauma

**Evidence-based Structural Interventions:**
- Economic Incentives: focused on school or other factors on the pathway to HIV (HPTN 068: Pettifor et al)
- Social Protections: combined approach to economic and social support (Cluver et al)
- Gender-transformative interventions: changing gender roles and norms, and promoting gender equity
Addressing the Prevention Needs of Young Women: Pilot Studies in South Africa
Mpondombili Project: Changing Gender Role Norms to Promote ‘Dual Protection’

- School-based HIV and Pregnancy Behavioral Intervention
  - Aim: Address dual risks of HIV/STIs and pregnancy through promoting ‘dual protection’ among school-going youth in grades 8-10
  - Gender-focused approach to prevention: addressing gender role norms and inequalities, sexual coercion, rights
  - 15 session curriculum-based intervention, adapted from US and SA interventions
  - Participatory process of intervention development over 15 months
  - Intervention delivery via Youth Peer Educators and Adult Role Models [Teachers with support from Clinic Nurses]

In collaboration with HIV Center for Clinical and Behavioral Studies, NY: HD037343 OAR Supplement
Smith K, Harrison A. Teachers and Sexuality Education in South African Secondary Schools. Sexuality Education 2012; 1-14 online first
Results

Evaluation at 5 months post-intervention:

- Impact on gender-related measures
- No significant decrease in sexual risk behavior (condom use at last sex)

- Intervention effects, comparing I vs C schools
  - Increased self-efficacy:
    - Condom use [OR=1.76, 95% CI 1.07-2.89]
    - Refusal of unsafe sex [OR=1.61, 95% CI 1.01-2.57]
  - Increased partner communication [OR=2.42, 95% CI 1.27-4.23]
  - Increased knowledge: where to obtain HIV testing

Gender-focused HIV and pregnancy prevention for school-going adolescents: The Mpondombili pilot intervention in KwaZulu-Natal, South Africa

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\section*{Abstract}

This pilot study evaluated a 15-session classroom intervention for HIV and pregnancy prevention among grade 8-10 boys and girls (aged 14-17 years) in rural South Africa, guided by gender-empowerment theory and implemented by teachers, nurses, and youth peer educators. Pre- and post-intervention surveys included 939 male and female students in two intervention and two comparison schools. The main outcome was condom use at last sex; secondary outcomes were partner communication, gender beliefs and values, perceived peer behavior, and self-efficacy for safer sex. At 5 months post-intervention, change in condom use did not differ between intervention and comparison schools. Intervention school youth had greater increases in self-efficacy for unsafe sex refusal (odds ratio [OR] 1.61, 95\% confidence interval [CI] 1.01–2.57) and condom use (OR 1.76, 95\% CI 1.07–2.89), partner communication (OR 2.42, 95\% CI 1.27–4.23), and knowledge of HIV testing opportunities (OR 1.36, 95\% CI 1.08–1.73). This gender-focused pilot intervention increased adolescents' self-efficacy and partner communication and has potential to improve preventive behaviors.

\section*{Introduction}

In South Africa, unequal gender relations structure patterns of HIV risk, contributing to disproportionately high HIV infection prevalence among young women (Stirling, Rees, Kasedde, & Hankins, 2008). Among youth aged 15–24, HIV prevalence among women increases from 5.6\% at ages 15–19 to 17.4\% at ages 20–24, versus 0.7\% among teenage males and 5.1\% of men aged 20–24 (Shisana et al., 2014). Incidence of new HIV infections also differs sharply by gender: 2.5\% in 15- to 24-year-old women versus 0.6\% in men.
Empower-Nudge
Promoting Dual Protection among Young High Risk Women in Cape Town, South Africa

- Behavioral economics approach

- Investigate role of a lottery-based economic incentive to promote consistent and ongoing dual protection among women aged 18-30

- Qualitative investigation of reproductive decision-making

- Brown University Seed Funds, in collaboration with Dr. Omar Galarraga and other researchers at Brown and UCT
New Approaches to Engaging and Empowering Youth
Grassroot Soccer: HIV Prevention through Soccer

- SKILLZ Street program for girls

- Building girls’ self-esteem through sport
  - Focus on youth engagement and community mobilization

- Coaches as mentors, combined with HIV prevention knowledge and skills

- Outcomes: increased HIV testing, better school performance

- Links to financial literacy and vocational education
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