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# DREAMS LITERATURE REVIEW

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# Agenda

- **Introduction**
  - Background
  - Project objectives
- **Methods**
- **Results**
- **Recommendations**

# Introduction

BACKGROUND

Adolescent girls are disproportionately affected by HIV. Adolescent girls and young women (AGYW, ages 15-24) account for 71% of new HIV infections among adolescents in sub-Saharan Africa[1].

The DREAMS partnership aims to reduce HIV infections among AGYW in 10 sub-Saharan African countries. While most services are being delivered directly to AGYW and their families, one important component provides HIV testing and services to sexual partners of AGYW as a way of reducing their risk. Because testing among men in sub-Saharan Africa is low and because men generally present late for HIV testing and treatment, novel approaches are needed to access these men as part of overall DREAMS strategies.

[1] The United States President's Emergency Plan for AIDS Relief, 2016, www.pepfar.gov

# Introduction

OBJECTIVE

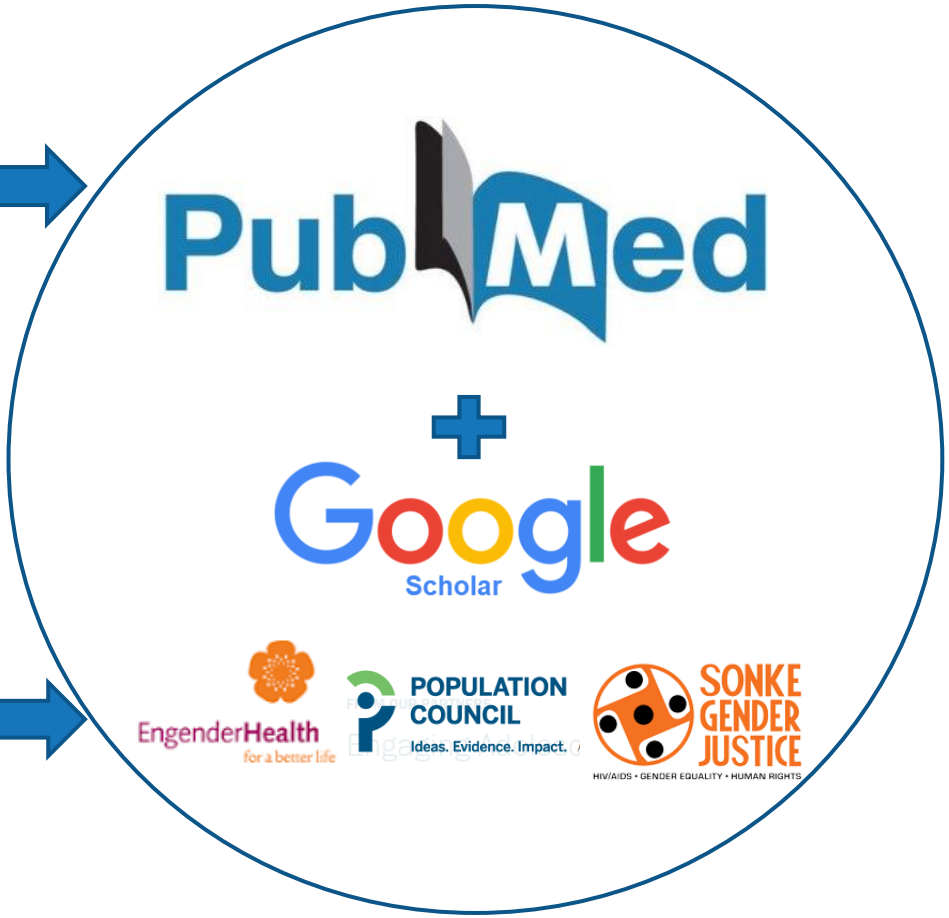
To provide a landscape analysis of research done in the past 15 years, with special focus on the most recent 5 years, in the 10 DREAMS countries or other sub-Saharan African countries, on the following:

1. Strategies and research to identify high-risk sexual partners for AGYW; and
2. Successful methods for achieving high rates of HIV testing in these men; and
3. Strategies for linking HIV+ men to services, including ART.

# Methods

**Objective 1:** Characteristics of high-risk male sexual partners of AGYW & strategies to identify these partners

**Objectives 2 & 3:** Evidence of successful strategies for increasing HIV testing and treatment in men



## **Objective 1:** Characteristics of high-risk male sexual partners & strategies to identify these partners

### ➢ Search Strategy 1 – Broad Search:

Using broad search terms to identify articles:

- **Disease:** HIV
- **Location:** sub-Saharan Africa, specifically 10 countries of interest
- **Population of interest:** adolescent girls, young women, ages 15-24 years
- **Topic of interest:** partners, relationships, networks
- **Exclusion topics:** MSM, sex workers, treatment

### ➢ Search Strategy 2 – Targeted Search:

- Using common topics identified in Search Strategy 1 to drive targeted searches (e.g., truck drivers/taxi drivers, age-disparate, transactional sex)
- Using "Similar Articles" and "Cited by" features in PubMed of relevant articles identified in either Search Strategy 1 or 2
- Searching additional articles based on citations of relevant articles

### ➢ Articles Reviewed:

- Full review of 25 articles

# Inconsistent relationship between partner's age and HIV

| Characteristic | Country | Finding |
|---|---|---|
| Age disparate relationships | Various (review) | 8 of 10 studies that assessed HIV prevalence found an association with older partners; 1 prospective study did not find an association between HIV incidence and older age (Swartzendruber 2013) |
| | South Africa | No association between HIV-1 acquisition and partner age difference > 5 years (Harling 2014; Balkus 2015) or > 10 years (Balkus 2015) |
| | | Factors associated with partner age discordance:<br>• Casual partnership<br>• Partner not enrolled in school<br>• More frequent sex (>=2-3 times/month vs. <=1 times/month)<br>• Less frequent condom use<br>• Partner has concurrent partnerships (Ritchwood 2016) |
| | | Among 16-24 year old women (N=3,946), 36% had a partner 5 or more years older and 7% had a partner 10 or more years older (Maughan-Brown 2014) |

# Inconsistent relationship between partner's age and HIV

| Characteristic | Country | Finding |
|---|---|---|
| Age disparate relationships | Zimbabwe | "Sugar daddies" are not common in Harare, Zimbabwe sample (2.5% when defined as female partner under 20 years, 5.5% when defined as female partner under 25 years) and older men who had non-marital teenage partners were not more likely to be HIV-infected than other men and unprotected sex was not more common with their teenage partners. (Wyrod 2011) |
| | Uganda | No association between HIV-1 acquisition and older partner (Mathur 2015) |

# Partner employment may be linked to risk of HIV

| Characteristic | Country | Finding |
|---|---|---|
| Employment | Various (review) | 2 of 2 studies assessing employment found a significant association between HIV prevalence and partners in risky occupation (mineworker/travel guide) (Swartzenduber 2013) |
| | Uganda | Having a partner in high risk employment was not associated with HIV acquisition for women (HR: 1.09, 95% CI 0.88-1.35) (Kagaayi 2014) |
| | | Having a partner as a trucker was associated with HIV acquisition (IRR 1.97, 95% CI 1.12-3.47), but after adjusting for other partner factors it was no longer significant (Mathur 2015) |

# Strategies to identify partners

| Strategy | Concept |
|---|---|
| Know Your Epidemic | Tailoring surveillance efforts and using existing data to inform where resources should be allocated (UNAIDS 2013)<br>Other data should be used in conjunction with findings from Mode of Transmission metric (Mishra 2012; Mishra 2014) |
| ASERT | Anonymous, group-based reporting of partner characteristics (Hallman, 2014) |
| PLACE | Identifying venues where AGYW meet sexual partners (Burundi PLACE Report, 2014) |
| Spatial clustering and phylogenetics | Using spatial clustering to map out HIV-seropositive persons within geographic areas in combination with phylogenetics to better understand sexual networks (Grabowski 2014) |
| Mailbox Technique | Utilizing mailboxes installed in schools to understand youth perceptions on sex and relationships (Michielsen 2014) |
| Qualitative Case Control Study Design | Compare qualitative responses of newly HIV-positive cases with HIV-negative controls (Higgins 2014) |

## **Objectives 2 & 3:** Evidence of successful strategies for increasing HIV testing and treatment in men

- **Triple-pronged search strategy:**
  - PubMed
  - Grey literature
  - Snowball citations

- **Search terms:**

HIV infections/prevention and control, HIV testing, ART treatment, young adult, male, engaging men, sub-Saharan Africa

- **Exclusion criteria:**
  - Condom use BCC
  - MSM, PMTCT, commercial sex workers and their clients
  - No outcome
  - Not related to testing/treatment

- **Articles reviewed:**

Full review of 27 articles

# Home-based HIV counseling and testing (HB-HCT)

| Country | Finding |
|---|---|
| Uganda | Males almost twice as likely as females to accept HIV test (OR=1.65), 15-24 ages range most likely to accept test. Among those offered, overall acceptance of test 69% (Sekandi 2011) |
| Sub-Saharan Africa (systematic review) | Self-testing at home reached highest proportion of young adults; both home-based and mobile testing better than clinic-based (Sharma 2015) |
| Kenya | 81.7% overall acceptance of HBTC in urban and rural site. For adult men, 79.9% in urban and 75.4% in rural, adolescent men 89.3% in urban and 86.7% in rural (Dalal 2013) |
| Kenya | 99.1% test acceptance among adolescents, 98.3% among young adults. In younger adults, females less likely to test than males (AOR: 0.69, 95% CI: 0.65 to 0.73) (Wachira 2014) |

# Mobile-based HIV counseling and testing (MB-HCT)

| Country | Finding |
|---|---|
| South Africa, Tanzania, Zimbabwe | CBVCT with mobile component increased testing by 45% among men and 15% among women, compared to SVCT (Coates 2014) |
| South Africa | Among 4 interventions, urban mobile clinics had highest proportion of male clients (52%) and rural mobile clinics had highest proportion of no prior HCT (61%) or perceived risk (64%) (Mabuto 2014) |
| South Africa | In matched study, 51% of clients in mobile were male, compared to 27% in clinics. Mobile also more likely to catch opportunistic testers. (Meehan 2014) |

# Mobile-based vs. home-based HCT

| Country | Finding |
|---|---|
| Lesotho | Home-based testing had higher HTC uptake than mobile-based (92.5% versus 86.7% among people accessing services during multi-disease campaigns) (Labhardt 2014) |
| Swaziland | Mobile testing reached a higher proportion of adult men than home-based testing (42% vs. 39%) (Parker 2015) |

# Other strategies

| Country | Strategy | Finding |
|---|---|---|
| South Africa | **Call center** to link to care | 51% of tested individuals linked to care, with mean time of 31 days. Linkage lower in males (46.6%) (van Zyl 2015) |
| DRC, Republic of Congo, Rwanda, Burundi, Nigeria | **Workplace** VCT | Annual uptake between 15% and 32%, with proportion of HIV+ infected persons among testees 8.8% in first year and 3.0% in following period (Van der Borght 2010) |
| South Africa | **Incentivized** mobile testing | Incentivized testers were less likely to have been tested previously (66.9% vs 72.3%), and more likely to have newly diagnosed HIV infection (10.9% vs. 5.0%) (Kranzer 2015) |
| Malawi | **Incentivized** clinic testing | 77% of incentivized testers retrieved results, vs. 34% of non-incentivized testers (Thornton 2008) |
| South Africa | **Incentivized** mobile testing | In retrospective observational study in area of high unemployment, incentivized mobile testing more likely than non-incentivized mobile testing to catch first-time testers (60.1% vs. 42.0%) and those with advanced disease (14.9% vs. 7.5%). (Nglazi 2012) |

# Systematic reviews on testing strategies

| Region | Title and author | Findings |
|---|---|---|
| Sub-Saharan Africa | A systematic review and meta-analysis of community and facility-based approaches to address gaps in HIV testing and linkage in sub-Saharan Africa (Sharma 2015) | Self-testing at home reached highest proportion of young adults, while mobile HIV testing reaches the highest proportion of men |
| Sub-Saharan Africa | Systematic review of strategies to increase men's HIV-testing in sub-Saharan Africa (Hensen 2014) | Mobile testing outperformed standard VCT in getting men to test. Home-based testing was also effective, but less so than mobile testing. |

# Recommendations

- Age-disparate relationships do not seem to be associated with higher risk of HIV acquisition.
- Findings may be dependent on study setting and may not be generalizable to a different population.
- Incentivized testing is effective at targeting male first-time testers and those with HIV infection and/or advanced disease, and should be added to outreach strategies.
- Mobile and home-based testing strategies perform similarly, and both demonstrate higher testing uptake among young men than clinic-based testing.
- Additional research is needed to fill gaps in literature, specifically on other partner characteristics and strategies to improve linkage to ART.

# Thank you

Questions?