

Transactional sex and HIV Among Young Women in Rural South Africa

STRIVE Learning Lab, July 20, 2017

Meghna Ranganathan

Charlotte Watts, Lori Heise, Audrey Pettifor, Catherine MacPhail

Outline

The issue - HIV in young women in South Africa

Transactional sex – definition and motivations

Transactional sex and HIV

- Methods

- Findings

Discussion: Pathways between transactional sex and HIV risk

The issue: HIV in young women in South Africa

- Young women (aged 15-24) at higher risk of being HIV positive compared to same age boys or men.
- The epidemic in South Africa is largely heterosexually transmitted.
- Tremendous progress in reducing HIV/AIDS, yet some young women are being left behind.
- Apart from biological vulnerability, reasons for gendered nature of the HIV epidemic:
 - structural factors (income and gender inequality, gender norms, education status);
 - relational risk factors (age-disparate relationships, transactional sex and violence within partnerships); and
 - individual risk factors (inconsistent condom use, number of partners, age of sexual debut).
- Transactional sex emerges as an important risk factor for HIV in women.

Transactional Sex or “material exchange for sex”

Concept emerged in the 1900s in an effort to distinguish ‘prostitution’ or formal sex work from more informal exchange based relationships.

Documented in a wide range of settings in sub-Saharan Africa, such as Tanzania, Mozambique, Kenya, Uganda, Nigeria and South Africa.



Number of definitions of transactional sex with the most common being ‘sexual exchange for material gain or support’.

Sex work versus transactional sex

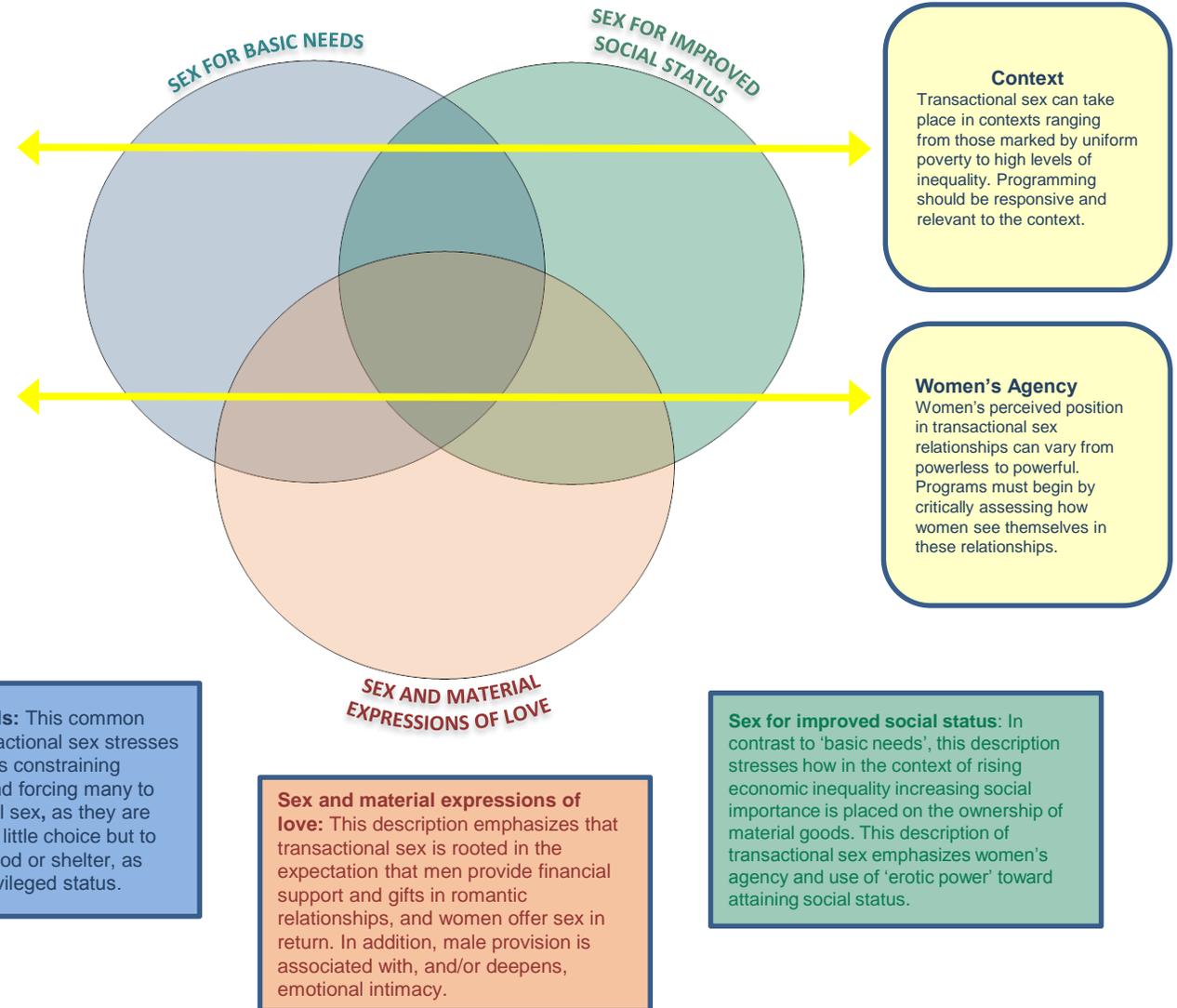
Tendency to conflate formal sex work with transactional sex – self evident meanings.

Sex work	Transactional sex
Self-identifies as a sex worker	Self-identifies as a girl or woman
Negotiation of exchange is explicit or upfront	No up-front negotiation of terms of the exchange
Sexual partner referred to as 'client'	Sexual partner referred to as 'boyfriend'

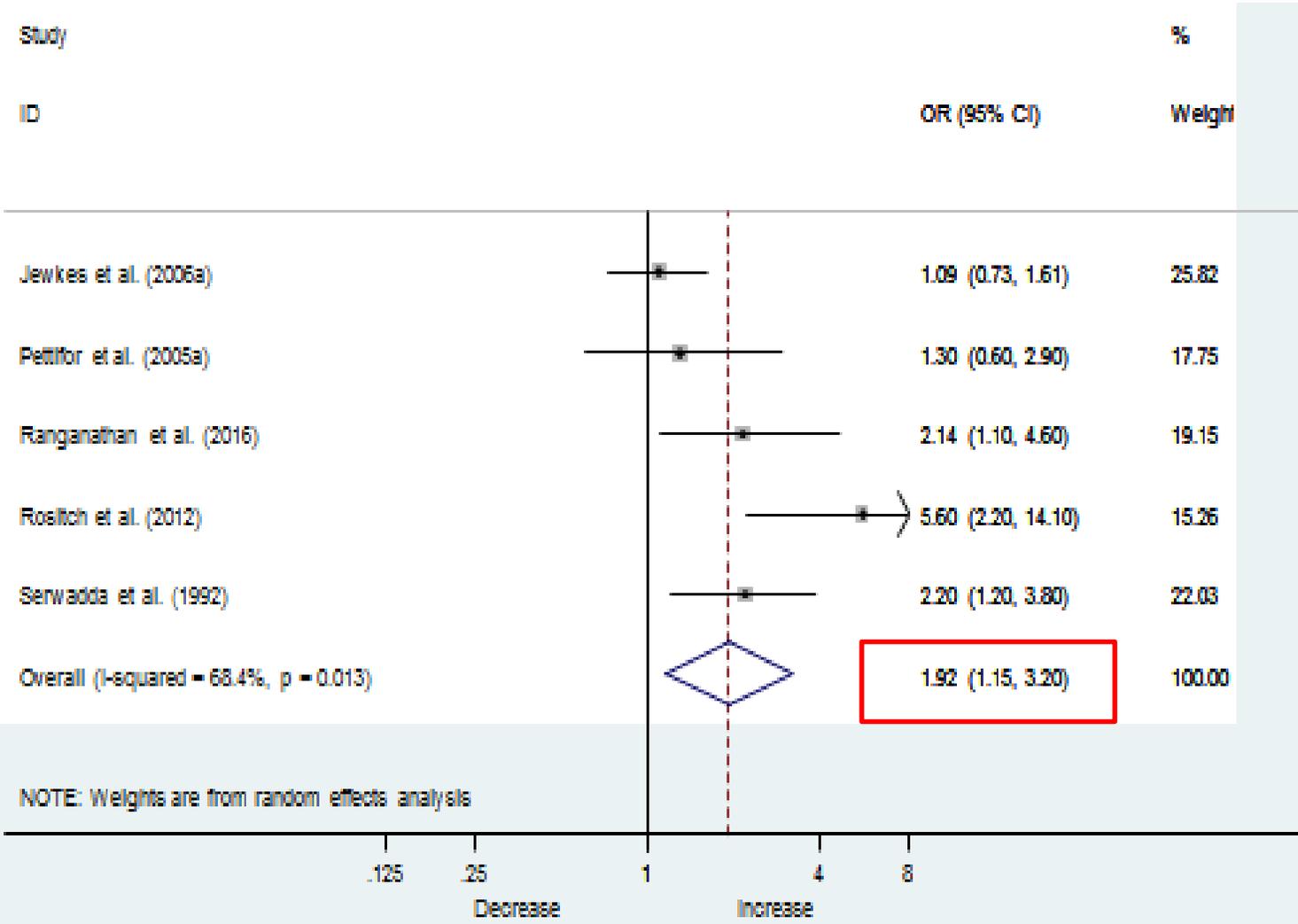
Jewkes 2012, Stoebenau et al 2016, Hallman et al 2017,

Motivations for transactional sex

- Economic survival
- High demand for material goods (“globalisation”)
- High levels of peer influence
- Aspirations for upward mobility or status
- Potential parental pressure



Association between Transactional Sex and HIV in Women



(Wamoyi et al JIAS 2016);

Association between transactional sex and other HIV Risk Behaviours

- Epidemiological studies find transactional sex is associated with other HIV risk behaviours
 - Violence (IPV)
 - Multiple partners
 - Alcohol use
 - Condom use (less clear association)
- The pathways through which TS increases HIV risk in young women remain less clear

Research objectives

To explore whether transactional sex is associated with an increased risk of HIV infection among a cohort of rural, sexually active young South African women (aged 13-20);



To explore whether this relationship is mediated through certain HIV related risk behaviours

Underlying macro determinants**

- Poverty and economic inequality;
- Lack of job opportunities;
- Gender inequalities
- Economic and socio-cultural processes of globalisation
- Gendered labour markets
- Structural and intimate partner violence

Household and young women's characteristics

- Household socioeconomic factors**
- Number of household members,
 - Primary caregiver type
 - Parent/caregiver educational level,
 - Orphan status,
 - Young women's perceived food insecurity,
 - Young woman's employment status
- Demographics**
- Age of young woman, current boyfriend, age of first sex, ever been pregnant

TRANSACTIONAL SEX

Risky sexual behaviours and partnership dynamics

- Concurrent sexual partners,
- Number of partners in the past 12 months
- Sex under the influence of alcohol
- Sex with older sexual partners,
- Unprotected last sex
- Unequal power dynamic in relationship
- Perceived partner concurrency
- HSV-2 infection

** Underlying macro-determinants and biological determinants not studied here, as data unavailable

** Biological determinants

Mediation model

HIV infection

(Ranganathan et al JIAS 2016);

Study setting



- Secondary analysis of baseline data from a conditional cash transfer trial (known as “Swa Koteka” or HPTN 068).
- North-east region of Mpumalanga province in South Africa.
- Densely populated, but rural area of 80,000 people.
- The Agincourt Health and Demographic Surveillance Site (AHDSS) used as sampling platform.
- ~ 28 villages and 21-22 secondary schools in the AHDSS catchment area.



Description of Swa Koteka (HPTN 068) Trial

Objective of main trial - To determine whether provision of cash conditional on school attendance reduced HIV incidence among young women.

Individually randomised controlled trial for 4 years (started in 2011).

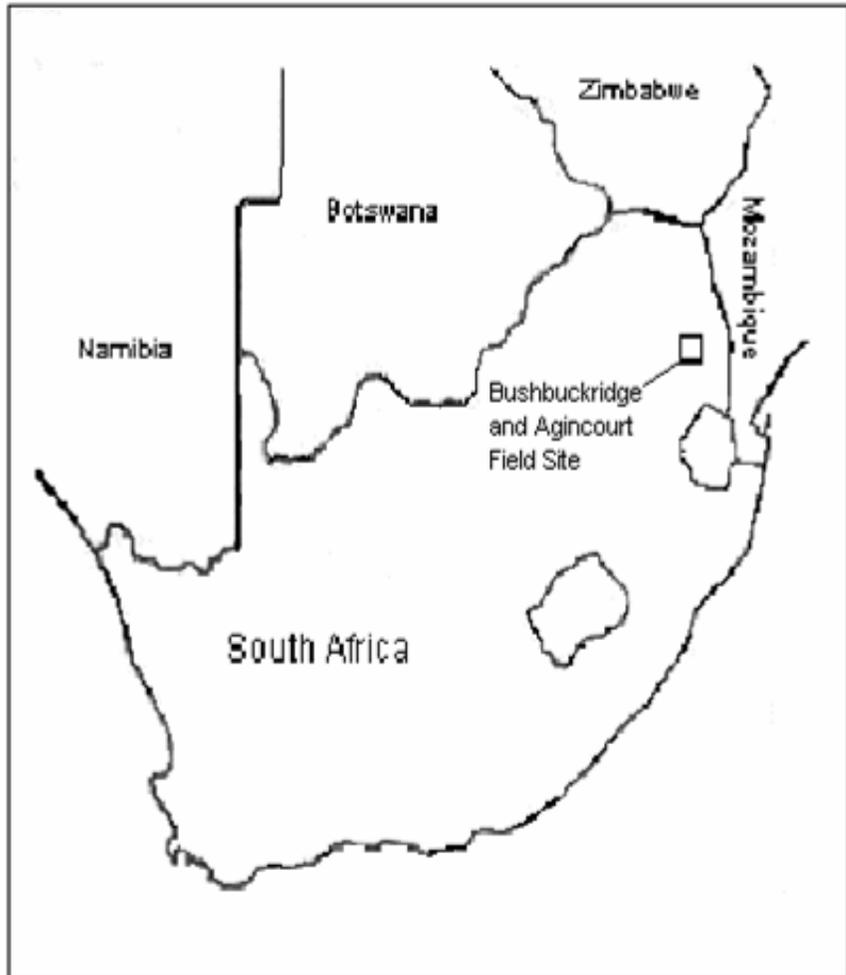
AHDSS used as a platform to identify eligible households and young women.

Total sample size:

- 2533 young women and households
- Sexually active young women = 693

Eligibility criteria for enrolment in main trial:

- Young women aged 13-20 years
- Enrolled in grades 8,9,10 or 11 at one of the schools in the AHDSS area
- Parent or guardian who lived with young woman and consented to study procedures
- Having a bank account or post office account



Main exposure variable

- Variable “transactional sex for money and/or things” constructed from questions:
 1. “Did you feel like you had to have sex with [initials] because they gave you money?”;
 2. “Did you feel like you had to have sex with [initials] because they gave you things (such as airtime, cell phone, ...)?”
- Questions refer to three most recent sexual partners
- Coded as binary for sex in exchange for money and/or things

Main exposure variable..cont

Four steps used to derive variable:

- Variable ‘transactional sex for money’ coded 1 if participant said yes to question 1;
- Variable ‘transactional sex for things’ coded 1 if participant said yes to question 2;
- Variable ‘transactional sex for money ‘AND’ things’ coded 1 if participant had said yes to question (1) and question (2);
- The final variable **‘transactional sex for money ‘and/or’ things’** coded 1 if participant said yes to question (1) OR question (2) OR (question 1 and 2)?”

Mediating and other variables

Mediating variables:

- Age difference between partners,
- condom use at last sex,
- sex under the influence of alcohol or drugs,
- partner concurrency by young women and her perception of partner concurrency,
- number of sexual partners in the past 12 months and
- sexual relationship power scale

Other variables: age of young women, age of first sex, employment status of young women, household consumption per capita (as a measure of living standards), educational level of primary caregiver and orphan status

Steps for mediation analysis

Estimated the **total effect** of the exposure on the outcome – logistic regression model for association between TS and HIV *adjusted for confounders*

Estimated the **direct effect** of transactional sex on HIV – logistic regression model for association between TS and HIV *adjusted for confounders + mediating variables + any exposure-mediator or mediator-outcome confounders.*

Comparison of total and direct effect to assess the extent to which association is mediated by hypothesised variables.

Each mediator considered individually and then all together in the same model.

Traditional mediation analysis of relationship between transactional sex and HIV

Potential mediators

Risky characteristics: age difference with partner; condom use at last sex; sex under alcohol or drug use; partner concurrency; past year sexual partners; HSV2 infection.

Risk perception: Perception of whether the partner has other concurrent partners

Power imbalance in the relationship: Perceived power dynamic in the relationship

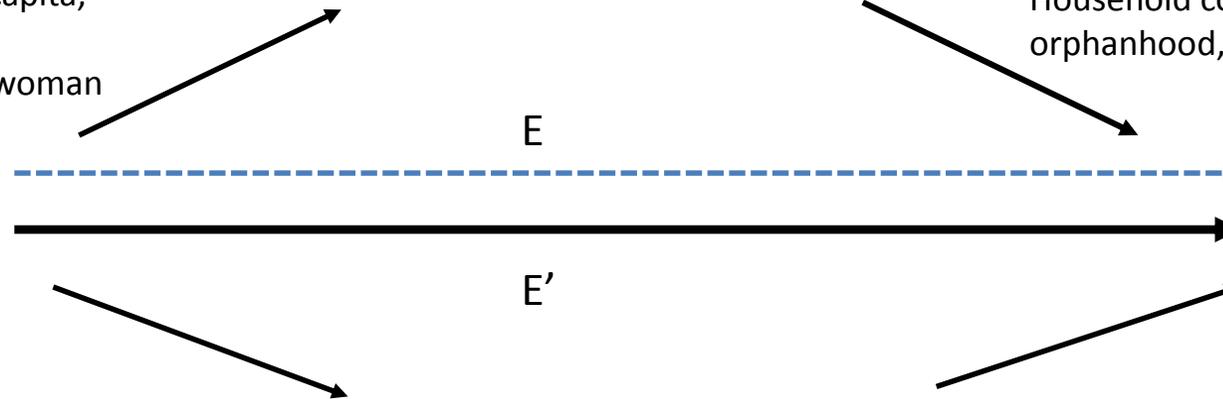
Confounders (C3)

Household consumption per capita, orphanhood, age of first sex, employment status of young woman

Confounders (C3)

Household consumption per capita, age, orphanhood, age of first sex

Transactional sex
(Exposure)



HIV infection
(outcome)

E – Total effect of exposure on the outcome via potential mediators, adjusting for confounders

E' – Direct effect of exposure on the outcome after adjusting for potential mediators

Confounders and potential effect modifier (C1)

Household consumption per capita, educational level of primary caregiver, have boyfriend, young woman's age, orphanhood, age of first sex, employment status of young woman

Findings – prevalence and relationship between transactional sex and mediating variables

Prevalence of transactional sex

- 14% (n=97) of sexually active young women reported engaging in transactional sex.
- Of young women who reported ever engaging in transactional sex, 12.4% were HIV-positive compared with 5.2% of those who did not report transactional sex.

Association between transactional sex and each mediating variable

- Age difference with partner (aOR: 1.33; CI: 0.40-1.58; 0.51)
- Condom use at last sex (aOR: 1.27; CI: 0.77-2.10; 0.33)
- **Sex on alcohol and drugs** (aOR: 3.10; CI: 1.55-5.71; **0.001**)
- **Young women's partner concurrency** (aOR: 1.86; CI: 1.18-2.91; **0.01**)
- **Sexual relationship power scale** (aOR: 1.73, CI 95% 0.96-3.12, **p=0.06**)
- Young women's perception of partner concurrency (aOR: 0.59; CI: 0.34-1.03; 0.10)
- Sexual partners past 12 months (aOR: 0.98; CI: 0.48-1.77; 0.81)

Findings: Mediation analysis between transactional sex and HIV

Total effect: Young women who report engaging in TS have **2.5 times higher odds** of being HIV +ve (CI95% 1.19-5.25, $P < 0.01$) after adjusting for confounders.

Direct effect: Young women who report engaging in TS have **2.6 times higher odds** of being HIV +ve (CI95% 1.16-5.63, $p < 0.05$) after adjusting for confounders and mediators.

Hence, given that there is almost no variation in the effect in the two results, it appears that **transactional sex and the association with HIV is not going through mediating variables.**

Discussion

- Transactional sex is associated with an almost three fold increased risk of being HIV positive (after controlling for other risk factors).
- However, no evidence that association is mediated by any of the sexual risk behaviours or relationship characteristics.
- So what makes transactional sex risky for HIV?
 - Choice of men that are part of higher sexual risk networks.
 - Measurement as the measure for certain variables (such as transactional sex or sex under the influence of alcohol) still need validation.

Discussion..cont

- Transactional sex also associated with sex under the influence of alcohol or drugs, with having concurrent partnerships and a low score on the sexual relationship power scale (SRPS).
 - Important to understand primary motivations or how relationship is perceived – transactional or gift-based. This has implications for understanding power dynamics.
 - Alcohol might affect HIV risk through other means than effect on sexual inhibition (e.g. clustering of risky men in alcohol taverns).

Strengths and limitations

- Biological marker of HIV – so no self-reported sexual behaviours as proxy markers
- Rigorous quality checks as part of an RCT
- Cross-sectional data, hence assessment of causality an issue
- As exposure and outcome are measured at the same point, difficult to make a case for a variable being a confounder or mediator. E.g., number of sexual partners.
- Social desirability bias and recall bias

Conclusions

- Provides quantitative evidence that transactional is associated with HIV risk in young women.
- One of the first studies that attempts to delineate mechanisms through which transactional sex increases HIV risk. However, there is a need for longitudinal analysis to assess causality.
- Need for better measures to capture the nuances of transactional sex and in particular capture the primary motivations of such relationships.
- Implication: multi-component interventions that target social and structural drivers of HIV along with a critical reflections piece (e.g., managing aspirations).

Acknowledgements

- The young women and their guardians participating in the HPTN 068 study.
- Supervisors and advisors: Professor Charlotte Watts, Professor Lori Heise, Dr. Richard Silverwood and Dr. Heidi Stoeckl
- The Principle Investigators Dr Audrey Pettifor, Dr Catherine MacPhail and Professor Kathleen Kahn, the project managers Mandie Selin and Tamu Daniel, the Agincourt Demographic Census team, the many fieldworkers and staff conducting data collection, the HIV Prevention Trials Network.
- Transactional sex working group (Dr. Joyce Wamoyi, Dr. Kirsten Stoebenau, Dr. Nambusi Kyegombe)
- UKaid from the Department for International Development for funding the STRIVE research programme consortium
- HPTN 068 is sponsored by the National Institute of Allergy and Infectious Diseases, the National Institute of Mental Health, and the National Institute on Drug Abuse, all components of the U.S. National Institutes of Health.