



# Microenterprise as HIV prevention among female sex workers in Chennai, India

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# Background

- Female sex workers (FSWs) have been central in India's HIV epidemic since 1989.
  - 85% of HIV infections in India are due to heterosexual intercourse.
- There are an estimated 1-16 million FSWs in India.
  - In high HIV prevalence states, prevalence rates among FSWs range from 5% to 55%.
- Eliminating the HIV risk associated with sex with FSWs could greatly impact the heterosexual HIV epidemic in India.

# Background

- Sexual risk behavior is heightened in the context of illegal, transactional sex.
  - Women's ability to negotiate condom use is compromised.
- FSWs risk of HIV is primarily economically motivated.
  - Exchanging sex for money/goods is often one of the few viable economic strategies available to impoverished women.
- Reducing the need for women to engage in transactional sex could greatly diminish sexual risk behaviors.

# Background

- There is a growing call for interventions that target underlying structural determinants of HIV risk.
  - Structural interventions “promote health by altering the context in which health is produced and reproduced.”
- Increased focus on structural interventions has brought attention to microenterprise programs.
- Microenterprise
  - Empowers low-income populations to have access to the financial market through microfinance, teaching basic financial literacy, and training in specific economic livelihoods.

# Aims

The pilot aimed to:

- 1) examine the acceptability of a microenterprise intervention among FSWs; and
- 2) to examine its effects on sexual risk in Chennai, India.

# Methods

- Randomized trial, 100 women randomized 1:1
- Two arms: microenterprise plus HIV prevention intervention (“intervention arm”) vs. HIV prevention education only (“control arm”)
- 2 arms
  - 1) HIV prevention
    - 4 sessions (8 hours)
    - Interactive
  - 2) HIV prevention + 100 hours of tailoring training
    - Taught by master tailors
- Data collection: baseline, 3-, and 6-month follow-up

# Methods

- Between-group comparisons at baseline and 6-month follow-up
  - Student's t-tests for continuous variables
  - Chi-square tests or Fisher's exact tests for categorical variables
- Linear regression: estimate the intervention effect on behavioral and financial measures
  - Bootstrapping used to obtain robust estimates of standard errors and confidence intervals
- All analyses were conducted in Stata Intercooled version 10.1 for Windows

# Results:

## Baseline Sociodemographic Characteristics

	Control		Intervention	
	(N=50)		(N=50)	
Median age (IQR)	36	(32-40)	33	(30-38)
Religion				
Christian	7	(14)	7	(14)
Hindu	37	(74)	38	(76)
Muslim	6	(12)	5	(10)
Married	30	(60)	31	(62)
Median # children (IQR)	2	(2-3)	2	(2-3)
Median age first sex (IQR)	18	(15-21)	18	(17-20)

# Results

## 6 Month Comparisons (N=100)

	<b>Control</b> <u>Mean</u>	<b>Tailoring Arm</b> <u>Mean</u>
Total income earned/month **	\$79 USD	\$105 USD
Income from sex work/month **	\$54 USD	\$34 USD
% of total income from sex work/month **	73%	32%
Average number of clients/month**	7.0 (4.0)	2.1 (3.5)

\*\* p<0.001

# Results

	Control arm 6-month change Mean (SE)	Tailoring arm 6-month change Mean (SE)	Adjusted <sup>a</sup> intervention effect Beta (p-value <sup>b</sup> )
# sex exchange partners per month	-1.8 (1.2)	-3.3 (0.9)	<b>-2.0</b> (0.001)

- In the presence of baseline age and household income, women in the intervention arm had an average of two less sex partners per month compared to those in the control arm ( $p < 0.001$ ).

# Conclusion

- Female sex workers are interested in learning new skills and are willing to work hard.
- Interventions that address issues such as poverty are well received by female sex workers.
- Structural interventions have the potential to have lasting effects on both researchers' and participants' "outcomes of interest."

# Conclusion: Bag Production

- Establishment of a NGO, the Pi Foundation, in the U.S. to market and sell Pi bags.
- 60% of intervention arm continues bag production (15 months post study).
- 7,000 bags sold to date (12 stores, 4 conferences, 1 event, internet).
- Large randomized trial beginning in 2010.

# The Proof is in their Words

*It was a difficult decision that I had to make[entering sex work]. My husband squandered all the money on alcohol leaving nothing for us. There were days where my son and I had not eaten a single meal.*

*If Pi delivers what I am hoping it will, maybe I can tell my other friends too- trust me, there are so many women out there who are hoping a new life will come their way.*

Aisha, 35 years old



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# Pi Foundation – [www.pibags.org](http://www.pibags.org)

