Assessing the Impact of the SHARE Project on Intimate Partner Violence, HIV Incidence and Sexual Risk Behavior in Rakai, Uganda

A quasi-experimental study

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Background: IPV and HIV

- Intimate partner violence (IPV) increases women's risk for HIV infection
- HIV-infection increases women's risk for IPV
- Several combined approaches to prevent IPV and HIV implemented in sub-Saharan Africa
  - Few have been rigorously evaluated
  - Most in South Africa
  - None has reduced both outcomes
- **Problem:** Our understanding of the effectiveness of HIV and IPV reduction strategies is limited

Rakai District
Uganda

Rakai Health Sciences Program

Reproductive health and HIV/AIDS research and service provision collaborative, rural Uganda

Background: IPV and HIV in Rakai

- **Intimate partner violence**

IPV type	Lifetime	Past year
Physical	30%	20%
Sexual	24%	14.5%

- **HIV prevalence**
  - 16% in women; 12% in men
- **Links between IPV and HIV**
  - Women whose 1st sex involved force were more likely to acquire HIV (aIRR= 1.59, 95%CI: 1.06-2.36)
  - HIV prevalence higher found in women who reported sexual violence and alcohol use (aOR = 1.79, 95% CI: 1.25–2.56)

Table 1. Determinants of IPV and HIV in Rakai

	Variables of interest	Reference
IPV victimization	Low education	Koenig et al., (2004a); Koenig et al., (2004b)
	Younger age	
	Use of alcohol	Zablotska et al., (2009)
	Multiple sex partners	
	Inconsistent condom use	
	Marriage (vs. consensual union)	Koenig et al., (2004a)
	Acceptance of IPV as justifiable	Koenig et al., (2004a);
HIV infection	Low education	Zablotska et al., (2009)
	Younger age	
	Use of alcohol	
	Multiple sex partners	Wawer et al., (1994)
	Inconsistent condom use	Wawer et al., (2009)
	Sexual violence/forced first sex	Zablotska et al., (2006); Koenig et al., (2006, unpublished)
	Couple communication	Wagman et al., (2003)

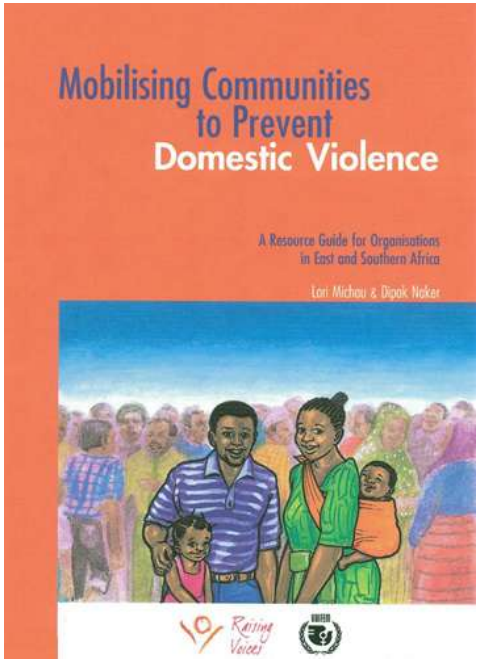
Evidence-based IPV prevention

The SHARE Project

2005 - 2009

The SHARE Project

- SHARE goals:
  - Educate community about:
    - public health implications of IPV
    - links between IPV and HIV
  - Reduce levels of IPV (and HIV)
- Methodology of Raising Voices' *Resource Guide* *(Michau L, Naker D, 2003)*
- Stages of change at community level
- **Multiple strategies** (Capacity building, community activism, advocacy, learning materials, special events)

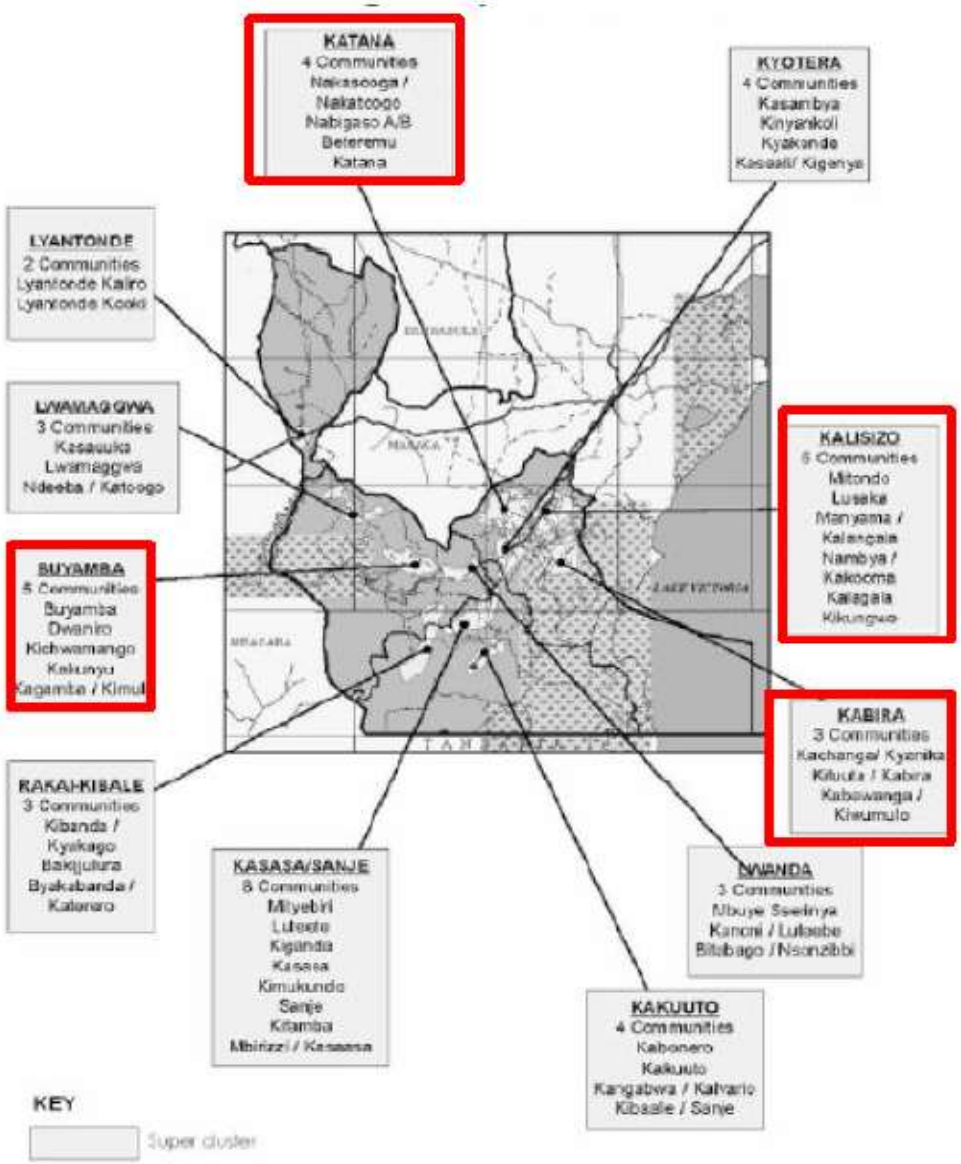


Research Methods
Study design

- Rakai Community Cohort Survey (RCCS)
  - Conducted in 47-50 communities organized in 11 clusters
  - All consenting adults aged 15-49 years
  - Annual surveys and biological samples
- **Quasi-experimental study** to assess impact of SHARE on IPV, sexual risk behaviors and HIV incidence
- Prior CRT of FP outreach randomized clusters
- SHARE study used same randomization scheme, but resource limitations only permitted 4 intervention clusters and 7 control clusters

Exposure

- Intervention areas
  - SHARE and
  - RHSP services
- Control areas
  - RHSP services only



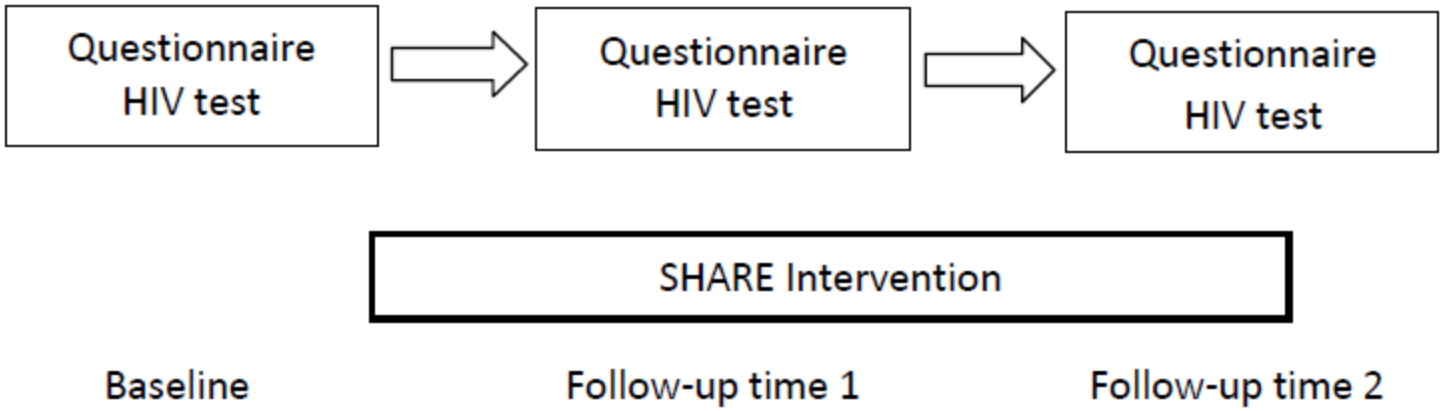
Research Methods

Data

Data from 3 rounds of RCCS:

- R1 = baseline (16 months: *Feb 2005–Jun 2006*)
- R2 = follow-up 1 (19 months: *Aug 2006–Apr 2008*)
- R3 = follow-up 2 (18 months: *Jun 2008–Nov 2009*)

Baseline (R1) and SHARE intro were staggered



Research Methods

Research Population

Inclusion Criteria

- Consent to participate in RCCS
- Enrollment at R1 or R2 and 1 or 2 follow-up rounds
- Report of sex in past year at baseline
- HIV-negative serostatus at baseline

Sample size per survey round

Round	Intervention	Control	Total
R1	3,316	10,803	14,119
R2	3,622	11,593	15,215
R3	3,636	11,032	14,668

Outcomes

1. **Past year sexual and/or physical IPV**
2. **Sexual risk behaviors (condom use, alcohol use, number of non-marital partners)**
   - PRRs will be estimated per visit by cumulating reports at each follow-up time using log-binomial or modified Poisson
3. **HIV incidence**
   - HIV incidence/100 py will be assessed by follow up interval and cumulatively; IRRs of HIV acquisition will be estimated using Poisson regression

* random effects models to account for intra-cluster correlation

Strengths and Limitations

STRENGTHS

- Uses data from one of the largest, most well-established community-based HIV and STI cohorts in the world
- Will analyze data from well-characterized populations of male and female HIV+ and HIV-
- Unique population allows for measurement of biological and behavioral outcomes, and assessment of trajectory of changes in violence, sexual risk behaviors and HIV incidence over time in both arms

LIMITATIONS

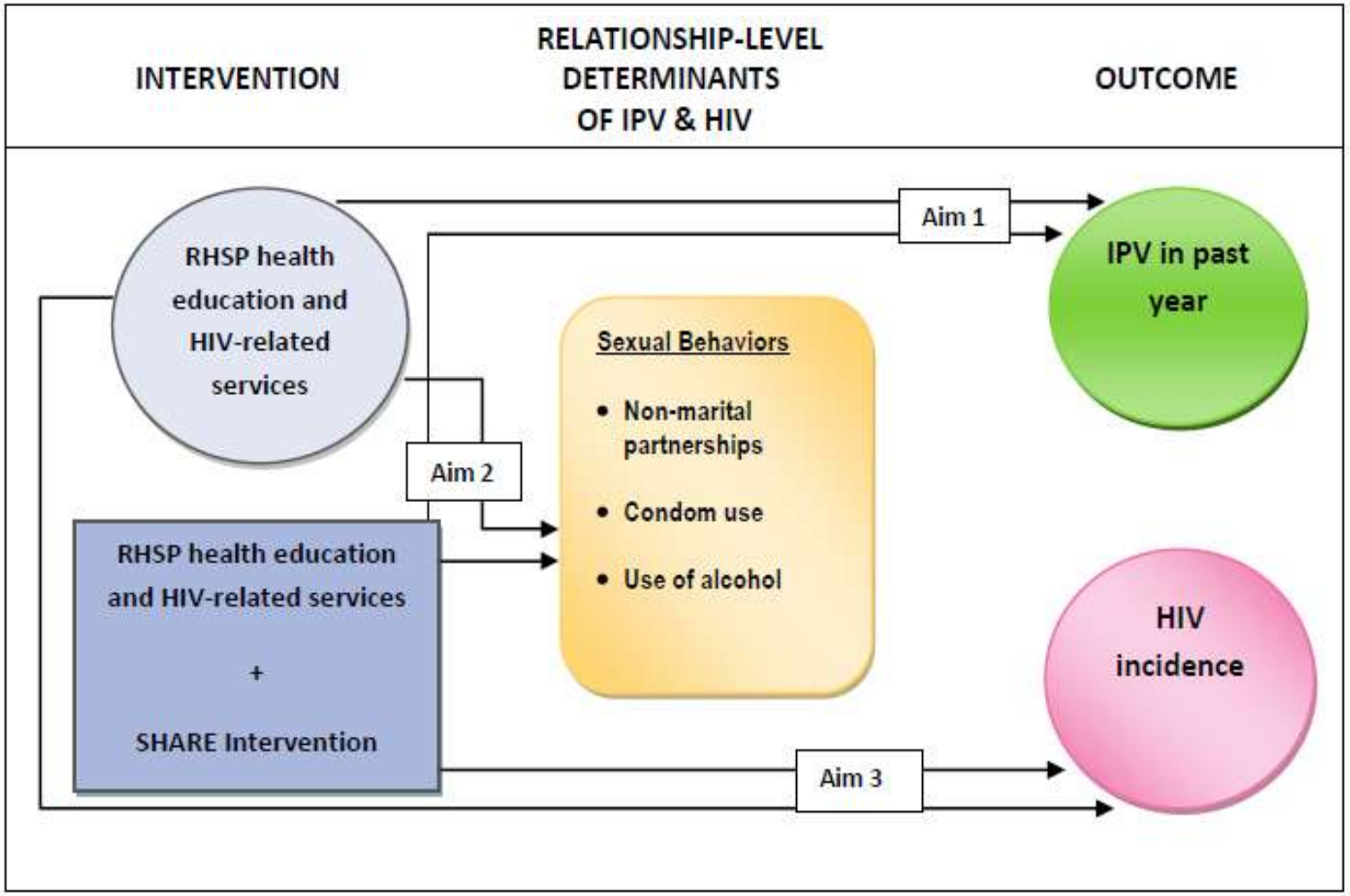
- Intervention participants might be motivated to report less IPV
- Possible contamination between trial arms
- Did not collect data on frequency of IPV
- Small number of study regions assigned to intervention arm
- RCCS communities may not be generalizable

Implications of Proposed Research

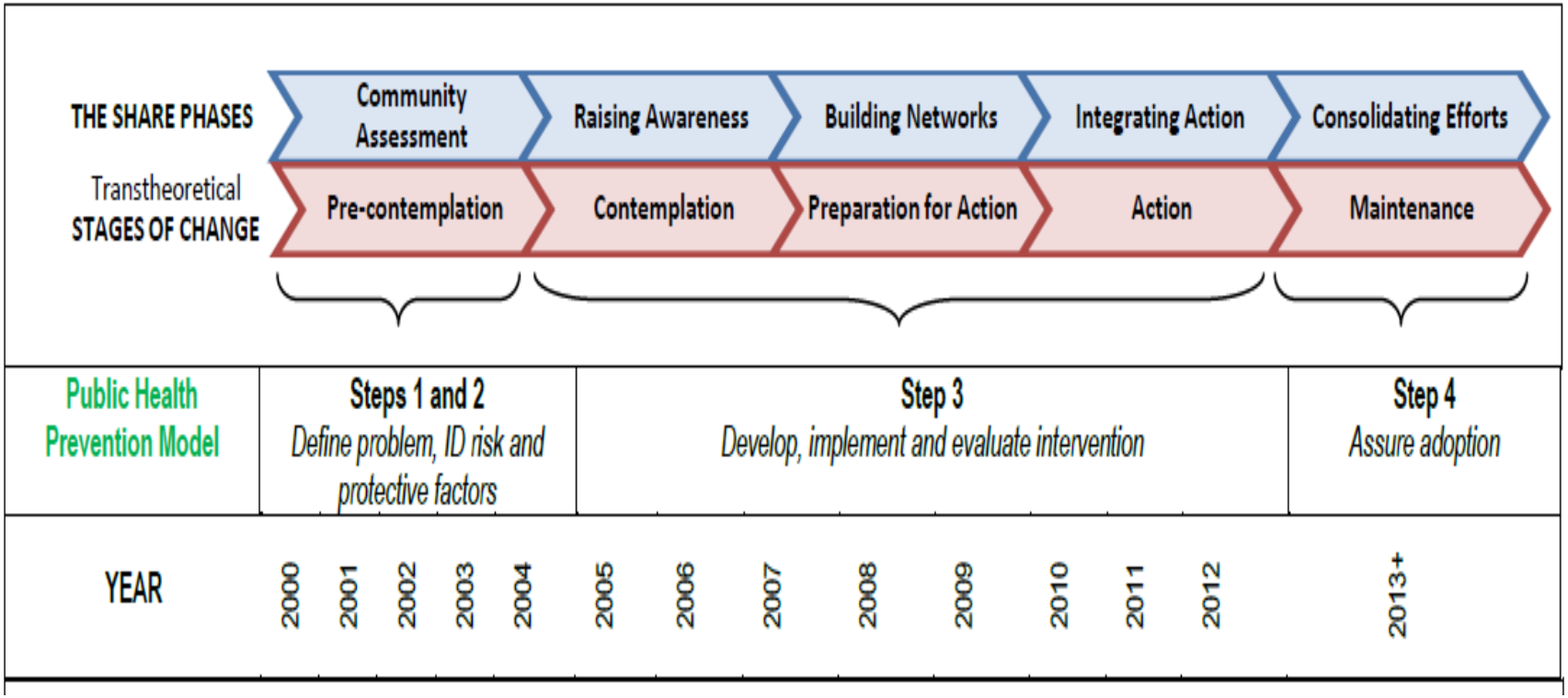
- **Public Health Practice**
  - This research could help guide future prevention efforts for IPV and HIV, in sub-Saharan Africa.
  - Elucidating links between IPV, sexual risk and HIV infection could:
    - Change attitudes about the normalcy of violence against women and legitimate the importance of efforts to prevent it
    - Highlight the importance of addressing IPV within HIV prevention
- **Research Implications**
  - Study findings will contribute to the literature on the effectiveness of evidence-based HIV and IPV reduction strategies.
  - Results could inform on and identify areas for future research on understanding and preventing IPV and HIV.

SUPPLEMENTARY SLIDES

Analysis Plan:
Analytic Framework



The SHARE Model



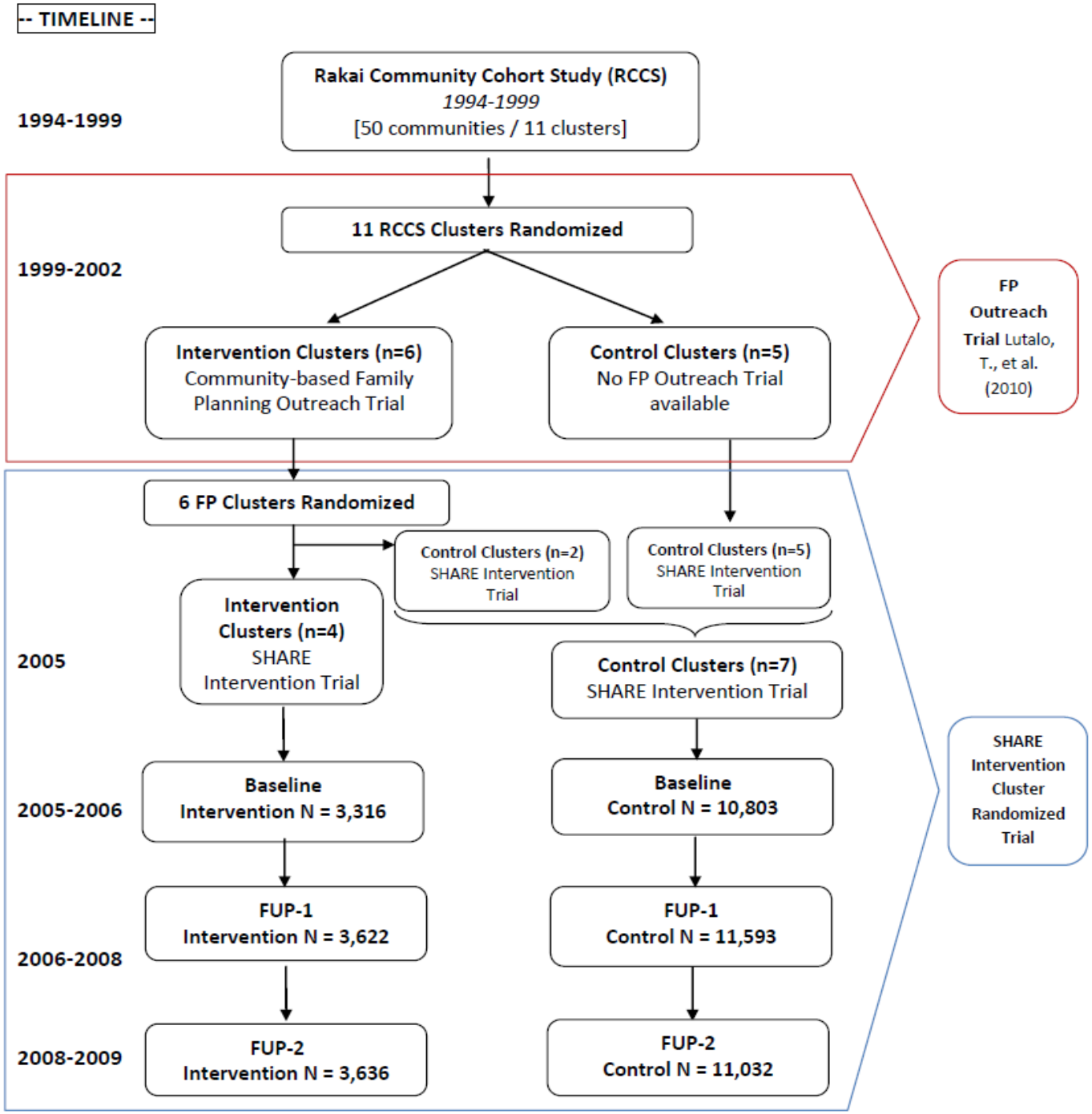
SHARE Activities and Strategies

- **Community activism** engaged community members to participate actively in preventing IPV in their community through activities such as a community volunteer network, IPV watch groups, open discussion with couples, community action groups, and community dialogues.
- **Advocacy** focused attention on women's needs with specific groups, including collaborations with local and cultural organizations, professional sector partnerships, and community leadership forums.
- **Capacity building** was done with SHARE staff, SHARE volunteers and professional sectors, through a Community Activism Course, training of community volunteers and professionals, and structured, on-going dialogue with various decision-makers in the region and at RHSP.
- **Learning materials** such as booklets, posters, stickers, story cards, and information sheets were used widely throughout the intervention communities
- **Media and events** created public forums for exploring ideas and values, such as community theatre, radio, newspaper, exhibitions, and media collaborations.
- **A referral network** of local agencies and providers and all SHARE staff, volunteers and RHSP staff were trained on how to use it. Referral ranged from helping women and their children find a safe place from their partner/husband to directing her to legal assistance, mental health care or family planning where possible. To protect privacy and safeguard women from further violence all referrals were done orally (as opposed to developing and distributing cards with referral information) that might be discovered by an abusive partner.
- **Combination IPV/HIV Prevention**

Rationale for individual vs. cluster level analysis

- More efficient analysis with improved power to detect significant changes over time
- Small number of clusters
- Imbalance between number of intervention and control clusters

Randomization Process



Advantages of random effects models

- Allow for analysis of trends over time while adjusting for correlation between successive measurements
- Allow for analysis of variation in baseline measurement and in the rate of change over time
- Do not assume that measurements taken at successive points in time are equally correlated (like ANOVA)
- Do not assume measurements taken at successive points in time have an unstructured pattern of correlations (like multivariate ANOVA)
- Better for analysis of small samples

Analysis Plan:
Statistical Methods Aim 1

- **Aim 1:** To assess the impact of SHARE + RHSP services on period prevalence of physical and/or sexual IPV in the past 12 months compared to control communities.
- **Methods:**
  - Prevalence risk ratios (PRR) will be estimated for each IPV type per visit by cumulating reports at each follow-up time.
  - Log-binomial or modified Poisson regression will be used, with random effects models to account for intra-cluster correlation
  - Univariate and multivariate analysis will estimate the reduction in victimization/perpetration of each type of IPV in the intervention versus control over ~4.5 years follow up.

Analysis Plan:
Statistical Methods Aim 2

- **Aim 2:** To assess the impact of SHARE + RHSP services on sexual risk behaviors compared to the control communities.
- **Methods:**
  - Assess comparability of intervention and control arms at baseline
  - Outcomes will be cumulated at each follow-up to estimate PRRs
  - Variables will be modeled categorically (number of non-marital partners and condom use) and dichotomously (alcohol use)
  - Generalized linear mixed effects models will be used (containing terms for treatment arm, survey round, and cluster) with random effects models to control for correlation

Analysis Plan:
Statistical Methods Aim 3

- **Aim 3:** To assess the impact of SHARE + RHSP services on HIV incidence compared with control communities.
- **Methods:**
  - HIV incidence/100 py will be assessed by follow up interval and cumulatively
  - Incidence rate ratios (IRR) of HIV acquisition in intervention vs. control arms will be estimated using Poisson regression
  - Random effects models will be used to account for intra-cluster correlation
  - Univariate and multivariate analysis will be done to estimate the IRR in intervention vs control communities over ~ three year period.

Primary Outcome Measurement

AIM 1

Outcome	Survey question(s) used to measure outcome	
Past year IPV	In the past 12 months, has your current partner done any of the following to you:	
	Moderate physical	(1) Pushed, pulled, slapped, or held you down; (2) Punched you with fist or with something that could hurt you; (3) Kicked you or dragged you;
	Severe physical	(1) Tried to strangle you or burn you; (2) Threatened you with a knife, gun or other type of weapon? (3) Attacked you with knife, gun, or other weapon?
	Sexual	(1) Used verbal threats to force you to have sex… (2) Physically forced you to have sex…; (3) Forced you to perform other sexual acts …when you did not want to?

Secondary Outcome Measurements

AIMS 2 and 3

Outcome	Survey question(s) used to measure outcome
Non-marital partners (past yr)	How many different sexual partners have you had in the last 12 months, including married or consensual partners, and anyone already mentioned? For married participants, non-marital partners are estimated from total partners minus marital partners.
Condom use (past 6 months)	During the past 6 months have you/partner used condoms? (Yes/No) – If yes, how often? (Sometimes, always, DK)
Alcohol with sex	Did you drink alcohol before your last sex with this partner? (Yes/No)
HIV incidence	Tested via blood samples, using a double enzyme immunoassay (EIA), with Western blot (WB) +/or polymerase chain (PCR) confirmation of discordant EIA results for all seroconversions.