Oral PrEP use and adherence during pregnancy and the postpartum period in Ugandan women

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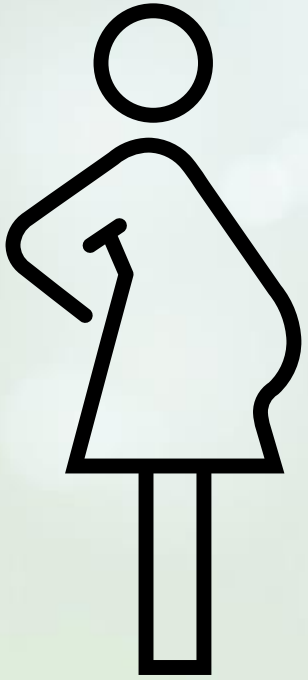
Introduction

PrEP use and adherence during pregnancy and postpartum



- Vulnerability to HIV increases during pregnancy and postpartum, yet little is known about HIV pre-exposure prophylaxis (PrEP) used at these times.

Objective

To describe adherence trends and characteristics of pregnant and postpartum women using oral PrEP in Uganda to identify opportunities to reduce HIV incidence.

Background

About PACO (Parent Study)

- PACO = Placentas, Antibodies, and Child Outcomes

- Prospective longitudinal birth cohort study of pregnant people with HIV (PPHIV), comparators without HIV, and people taking PrEP in pregnancy
  - Enrolled December 2019 – November 2024
    - 775 pregnant people and the babies born to them (as dyads)

- Dyads are followed through child age 5 years (every 3 months) to measure child growth, development, health outcomes, and relate them to placental findings.

PACO (parent study) population

Included:

- Maternal age ≥18 years
- All individuals taking PrEP in pregnancy
- All individuals living with HIV taking ART in pregnancy
- HIV-uninfected individuals (enrolled as the very next eligible person)

Excluded:

- Known or suspected multiple gestation pregnancy
- Placenta not collected
- Not available by telephone for post-discharge contact
- Inability to speak English or Runyankole well enough to provide informed consent

Our sub-study included:

- All HIV-uninfected individuals enrolled in the parent study (PrEP users and non-users)

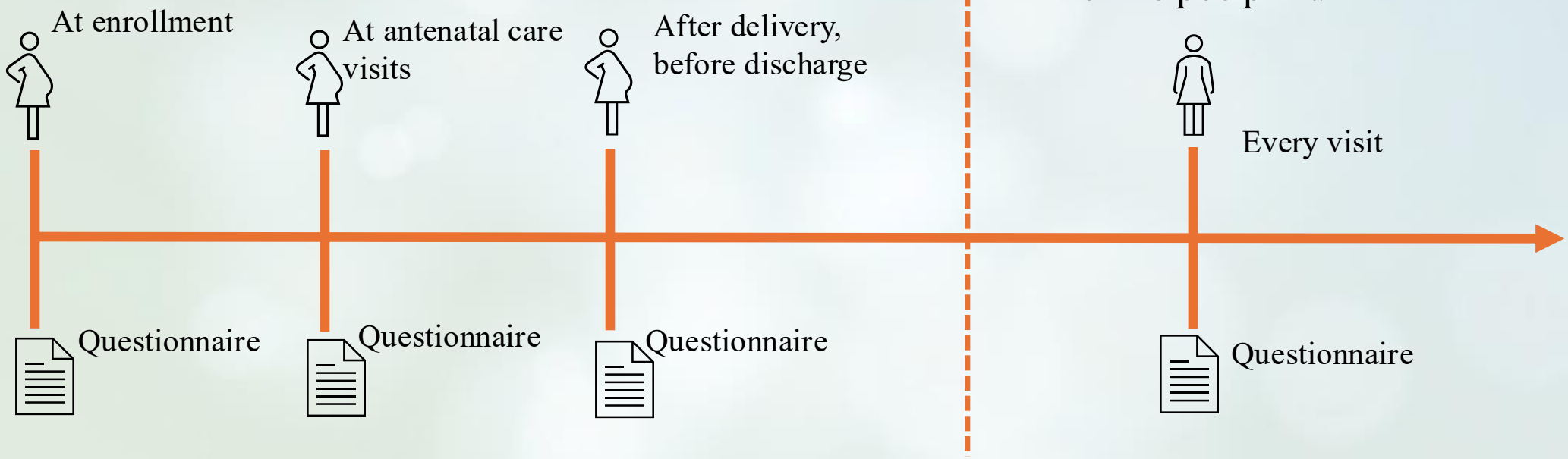
Data collection

Baseline:

- at enrollment during pregnancy

Follow-up:

- after delivery before discharge
- in-person visits every 3 – 6 months through 60 months postpartum

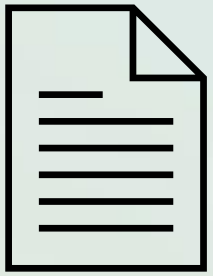


Total follow-up visits: **5,403**

Follow-up visit attendance

12 months	24 months	36 months	48 months
94%	98%	93%	86%

Questionnaire



- Reasons for taking PrEP, perception of risk
- Timing and reasons for stopping PrEP, if ever stopped
- How they took PrEP:
  - Number of times/day, days/week, missed doses
  - Self-perceived adherence and protection against HIV
  - Percentage of days taken PrEP in the last month

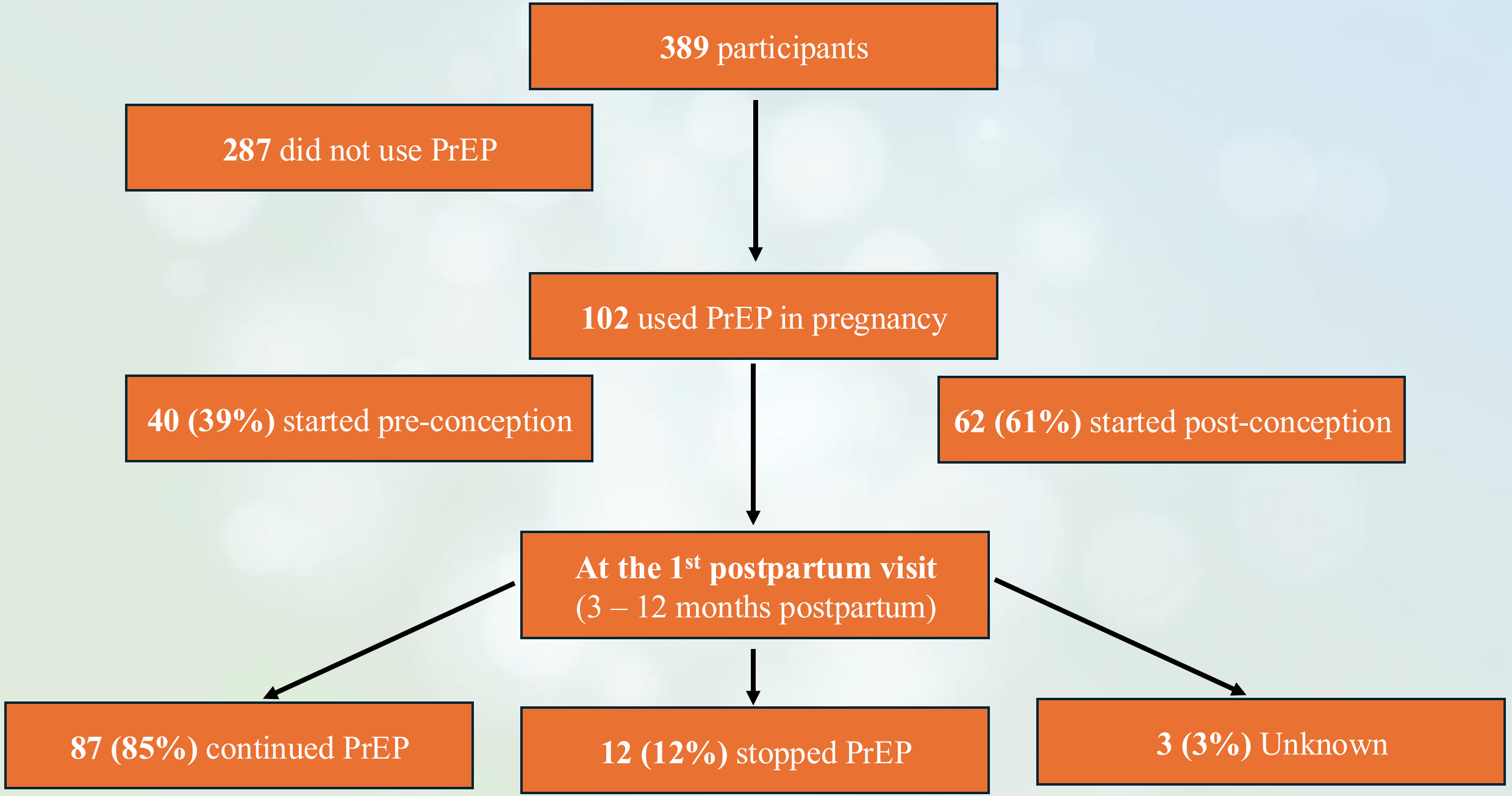
Analytic methods

- Calculated **asset index** (a measure of wealth) using principal component analysis

- Used **chi-square** and **t-tests** to compare self-reported adherence to daily PrEP in pregnancy and postpartum

- Used **logistic regression models** to determine associations with daily PrEP use 1) during pregnancy and 2) postpartum.
  - Variables considered for inclusion were parity, number of antenatal care visits, marital status, employment, residence in Mbarara (semi-urban), and self-reported PrEP adherence during pregnancy (for postpartum model)
  - Except for age, only variables with *P*-value <0.2 on bivariate analysis against the outcome were included

Results


389 participants
287 did not use PrEP
102 used PrEP in pregnancy
40 (39%) started pre-conception
62 (61%) started post-conception
At the 1st postpartum visit
(3 – 12 months postpartum)
87 (85%) continued PrEP
12 (12%) stopped PrEP
3 (3%) Unknown

PrEP users had less formal education and formal employment than non-users

Characteristic n (% or SD)	PrEP *n* = 102	Non-PrEP HIV-negative *n* = 287	*P*-value
Age in years	27 (6.2)	27 (6.1)	0.15
Parity	2.9 (1.7)	2.8 (2.0)	0.20
Married	94 (94%)	267 (93%)	0.71
Resided in Mbarara (urban/semi-urban)	41 (40%)	171 (60%)	0.001
Completed secondary education or more	40 (39%)	146 (51%)	0.04
Formally employed	33 (32%)	133 (46%)	0.04

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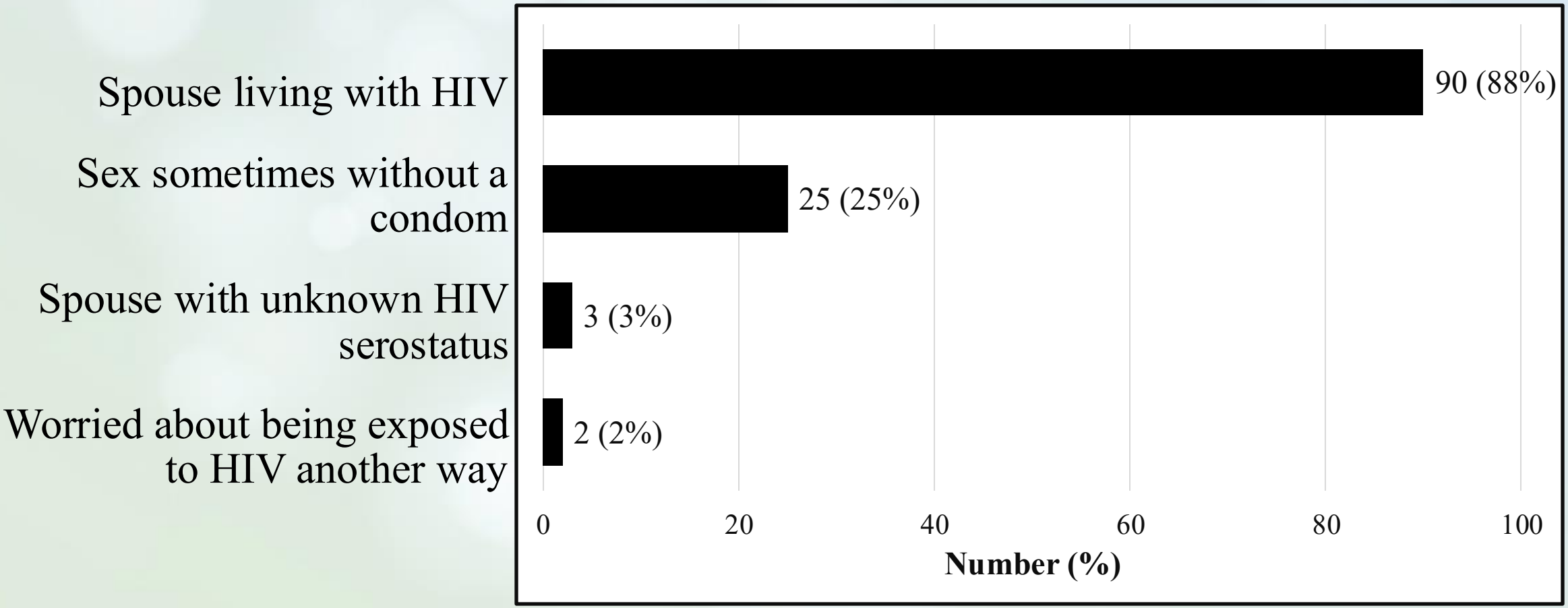
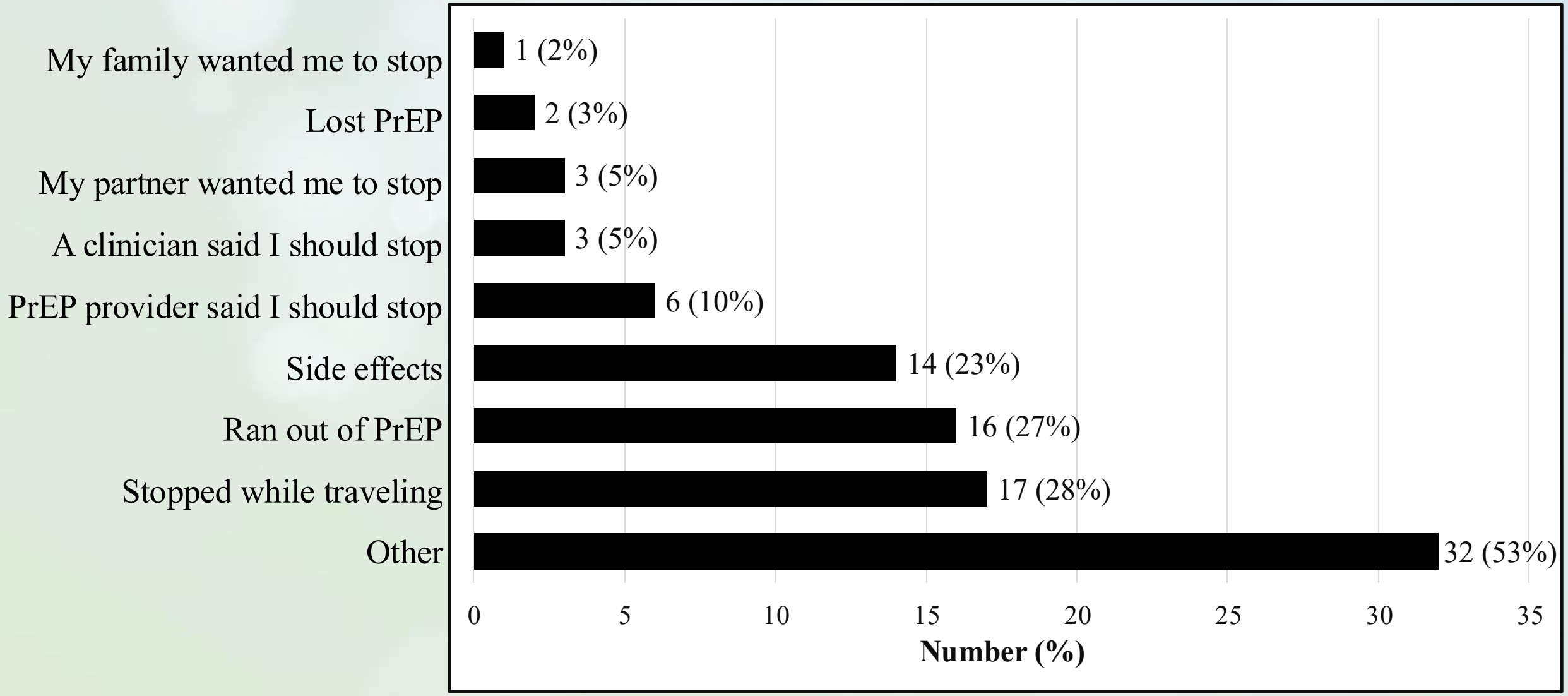
PrEP users were also less likely to reside in the urban setting of Mbarara

Reasons for initiating PrEP



Reasons for discontinuing PrEP

- 60 (59%) participants reported having ever stopped PrEP (at any time)



Logistic regression models of predictors of self-reported PrEP adherence 'all the time' (versus 'most of the time or less')

Enrollment (during pregnancy) n = 102				
Characteristic	Unadjusted Odds Ratio (OR)	*P*-value	Adjusted Odds Ratio (aOR)	*P*-value
Age in years	1.0 (0.9 – 1.0)	0.25	1.0 (0.9 – 1.0)	0.15
Formally employed	0.4 (0.1 – 0.8)	0.02	0.4 (0.1 – 1.0)	0.04
Highest asset index (wealth) quartile	0.3 (0.8 – 1.0)	0.05	0.4 (0.1 – 1.3)	0.12
First postpartum visit (3 – 12 months postpartum) n = 87				
Characteristic	OR	*P*-value	aOR	*P*-value
Age in years	1.0 (1.0 – 1.1)	0.34	1.0 (1.0 – 1.1)	0.5
Residence in Mbarara (semi-urban)	0.4 (0.2 – 1.0)	0.05	0.65 (0.2 – 1.8)	0.41
Highest asset index (wealth) quartile*	0.15 (0.0 – 0.7)	0.01	0.2 (0.0 – 1.0)	0.04
PrEP adherence in pregnancy	2.2 (0.85 – 5.7)	0.11	2.1 (0.8 – 6.1)	0.15

*Only the highest wealth quartile is reported (lower quartiles were not significantly associated with the outcome).

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Discussion and Next Steps

Strengths

- High cohort retention
- Greater insight into PrEP adherence in a unique population
- Understanding of PrEP adherence in relation to breastfeeding

Weaknesses

- Small cohort size
- Unknown reasons for discontinuing PrEP postpartum
- Self-reported adherence is less reliable than ‘objectively’ measured adherence

Next steps

- Objective measures of adherence (maternal dried blood spots; baby hair)
- Study reasons for discontinuation postpartum
- Explore attitudes and interest in long-acting injectable PrEP

Conclusion

Self-reported PrEP use was high in a Ugandan community-based pregnancy cohort with 85% continuing PrEP postpartum

- Postpartum adherence was higher than some other recent cohorts
- During pregnancy, formal employment was associated with lower PrEP adherence
- Postpartum, greater wealth was associated with lower PrEP adherence
- Reasons for PrEP non-adherence or discontinuation may be amenable to adherence support interventions and novel PrEP modalities
- We highlight high and persistent PrEP use during pregnancy and postpartum in an HIV endemic setting as opportunities to reduce HIV incidence

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Thank You