

Associations between contraception and HIV prevention usage and sexual relationship type among fishermen in rural Kenya: A multilevel analysis

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Background

- Fishermen along Lake Victoria experience high HIV burden (10-19% vs. 5% national prevalence)¹ and poor HIV care engagement²⁻⁴
- Higher HIV-risk sexual behaviors are common- concurrent partnerships (25% men vs. 7% women)⁵⁻⁹
- Contraceptive use lower than national average (43% vs. 57%)¹⁰
- PrEP uptake at 27% among men with elevated HIV risk but lower among mobile men¹¹



Rationale and research question

In context where concurrent sexual relationships are common, relationship type (i.e. married, casual, commercial sex worker) may influence HIV and pregnancy prevention methods used.

We examined partnership types associated with using contraceptives and HIV preventive methods (condoms or PrEP) among Kenyan fishermen.



Setting

- **Siaya County** borders Lake Victoria and has a population of ~ 1 million, with ~79 beaches and 38K fisherfolk¹²
- HIV transmission risks remain high in fishing communities in Kenya
 - HIV incidence: 4.6-6.9/1000 PY (2018)¹³
 - HIV prevalence: 9.5-19.1% (2022)¹⁴
- Mobility & transactional sex economy (*jaboya*) contribute to high HIV risks^{15,16}
- Low rates of testing and health services use among fishermen influenced by mobility (travel across lake, working in several beaches)
 - HIV stigma in beach communities
 - Gender norms



Methods

RELATIONSHIP HISTORY CALENDAR		BEACH ID _____									
		OWETE ID _____									
YEAR		2020									
Relationship 1		Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Ma	
1. Partner initials	3 Duration										
	4 P Resident in same town										
	5 P Resident same household										
2. Partner age	6 P Moved										
	7 Type of Relationship										
	8 Polygamous Relationship										
	9 Frequency of Sex										
	10 Contraception										
	11 Condom Use										
	12 PrEP Use										
	13 Amount Given by R										
	14 Amount Received by R										

Image of relationship history calendar

¹⁷Luke et al., 2011; ¹⁸Camlin et al. 2018

- Owete study (NCT04772469) - a cluster-randomized controlled trial using a social network approach to increase uptake of HIV testing, prevention, and treatment among Siaya County fishermen
- Baseline survey data collected in 2022 in three beach communities
- Sexual relationship history calendar^{17,18}- men reported each partner month for past 6 mo.:
 - Partnership type (i.e., married, dating)
 - PrEP usage (self or partner)
 - Condom use (self)
 - Contraceptive use (self or partner)

Analysis

Poisson multilevel models (relationships within men within social-network clusters) with robust cluster-adjusted standard errors were fitted to examine associations between:

1. Condom use with higher HIV-risk sexual partners
2. PrEP use with higher HIV-risk partners
3. Modern contraceptive use with higher HIV-risk partners
4. Dual condom and modern contraceptive use with higher HIV-risk partners

Models estimated adjusted prevalence ratios (aPR), adjusting for age, education, marital status, household wealth, polygamy, relationship concurrency, time, and community.



Results : baseline characteristics of participants

715 men in 156 social network clusters

1,118 active sexual relationships in past 6 months

Mean N of relationships per man = 1.7 [Range:1,13]

Mean age = 37 [IQR: 30,42]

Primary education or less: 68%

Married: 87%

Polygamous relationships: 19%

Results: Key sexual and reproductive health variables

Any higher HIV-risk sexual partner in past 6 months: 12%

Any relationship concurrency: 45%

Any PrEP use reported with any partner: 8%

Any contraceptive use across all partners: 81%

Any modern method of family planning including condoms: 75%

Any modern family planning method/no condom: 54%

Any condom use reported in the past 6 months with any partner: 46%

Dual method use: 21%

Results: Models

Outcome (n=715)	Main predictor	aPR	SE	95% CI	p-value
Condom use	Higher risk sexual partnership	2.52	0.48	1.74 – 3.65	<0.001
PrEP model	Higher risk sexual partnership	1.11	0.67	0.34 – 3.65	0.865
Modern contraceptive use (excluding condoms)	Higher risk sexual partnership	1.08	0.25	0.69 – 1.71	0.730
Dual method use	Higher risk sexual partnership	2.39	0.90	1.14 – 5.01	0.021

Note: Poisson multilevel models, aPR = Adjusted prevalence ratios (aPR)

Models adjusted for age, education, marital status, household wealth, polygamy, relationship concurrency, time, and community.

Conclusions

- Use of relationship history calendar is strength of this research
- While fishermen in higher HIV-risk sexual relationships are taking steps to prevent HIV and unintended pregnancies by using condoms and dual methods, PrEP or modern contraceptive use alone is not likelier in these relationships
- HIV preventive methods such as long-acting PrEP or methods that combine PrEP with contraceptives may increase uptake within higher-risk relationships



Acknowledgements and Questions

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