IMPACT OF NATURAL DISASTERS ON HIV RISKS AND VIRAL SUPPRESSION IN A UGANDAN FISHING VILLAGE

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BACKGROUND

- Understanding the impact of natural disasters on the HIV epidemic in populations with a high HIV burden is critical for effective control efforts.
- We assessed HIV outcomes in a high-HIV prevalence Lake Victoria fishing community in Uganda before and after the COVID-19 pandemic and a severe lake flooding event in 2020.

METHODS

- We used data from the largest fishing community in the population-based Rakai Community Cohort Study.

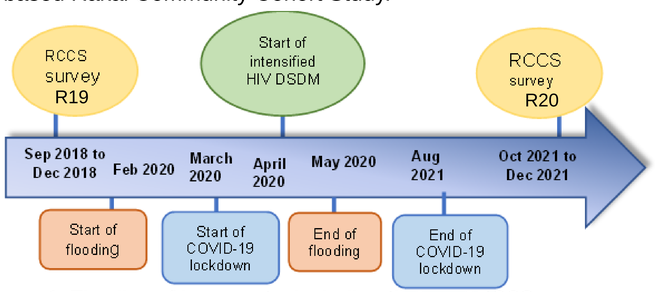


Figure 1: Timeline of key events, including timing of RCCS surveys

- Outcomes included prevalence of HIV risk behaviors, seroprevalence, and viral suppression among people living with HIV.
- Households impacted by flooding were identified using drone images and through consultation with community health workers.

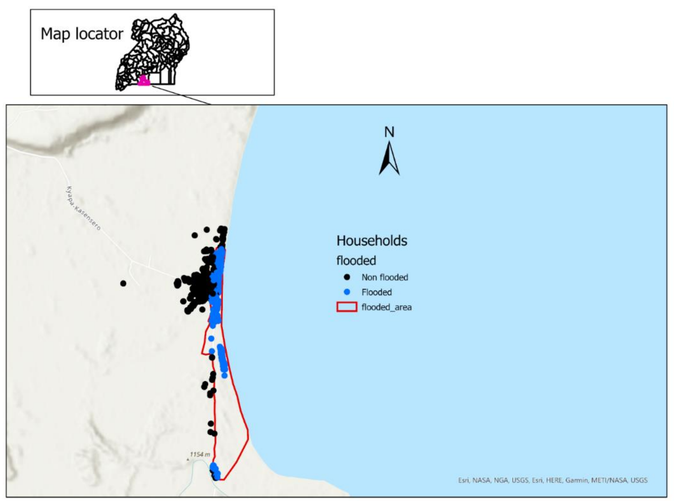


Figure 2: Map of flooded households following flooding

- Differences in HIV-related outcomes before and after flooding/COVID-19 were assessed using difference-in-difference statistical modeling.

Flooding and COVID-19 related lock downs did not lead to increased sex behaviors ,HIV treatment coverage and viral suppression were sustained through the natural disasters.

Transactional sex declined from 27.9% to 23.3% (p=0.098) in the flooded and from 30.4% to 25.8% (p=0.053) in non-flooded , while ART coverage significantly increased from 92.0% to 97.7% (p=0.008)in the flooded group and from 91.3% to 96.8% (p=0.007) in flooded group.

RESULTS

- 1,226 people participated in the pre- and post-COVID surveys, of whom 506 (41%) were affected by flooding and 513 (41.8%) were female.
- HIV seroprevalence pre-COVID was 37% in both flooded and non-flooded households. following COVID-19 .and 38% in post-COVID .
- There was a non-statistically significant increase in HIV viral load suppression in both flooded and in non-flooded households following COVID-19.

Table 1: Behavioral characteristics and HIV outcomes, compared by household flooding status in the pre- and post-COVID-19 survey rounds.

	Flooded (N=506)			Non-Flooded (N=720)		
HIV associated behaviors	**Pre-COVID**	**Post-COVID**	**P value**	**Pre-COVID**	**Post-COVID**	**P value**
Number of sexual partners in the past 12 months						
0 to 1 partner	309 (61.1)	305 (60.3)	0.797	423 (58.8)	420 (58.3)	0.873
More than 1 partner	197 (38.9)	201 (39.7)		297(41.3)	300 (41.7)	
Inconsistent condom use						
No	295 (58.3)	320 (63.2)	0.108	421 (58.5)	452 (62.8)	0.095
Yes	211 (41.7)	186 (36.8)		299 (41.5)	268 (37.2)	
Transactional sex						
No	365 (72.1)	388 (76.7)	0.098	501 (69.6)	534 (74.2)	0.053
Yes	141 (27.9)	118 (23.3)		219 (30.4)	186(25.8)	
HIV status						
Negative	319 (63.0)	314 (62.1)	0.745	455 (63.2)	443 (61.5)	0.514
Positive	187 (37.0)	192 (37.9)		265 (36.8)	277 (38.5)	
ART status						
Not on ART	**15 (8.0)**	**4 (2.1)**	**0.008**	**23 (8.7)**	**9 (3.2)**	**0.007**
Yes	**172 (92.0)**	**188 (97.9)**		**242 (91.3)**	**268 (96.8)**	
Viral load suppression						
Suppressed	159 (85.0)	169 (88.0)	0.108	233 (87.9)	246 (88.8)	0.126
Not suppressed	27 (14.4)	17 (8.8)		30 (11.3)	20 (7.3)	
Missing	1 (0.5)	6 (3.1)		2 (0.7)	11 (3.9)	

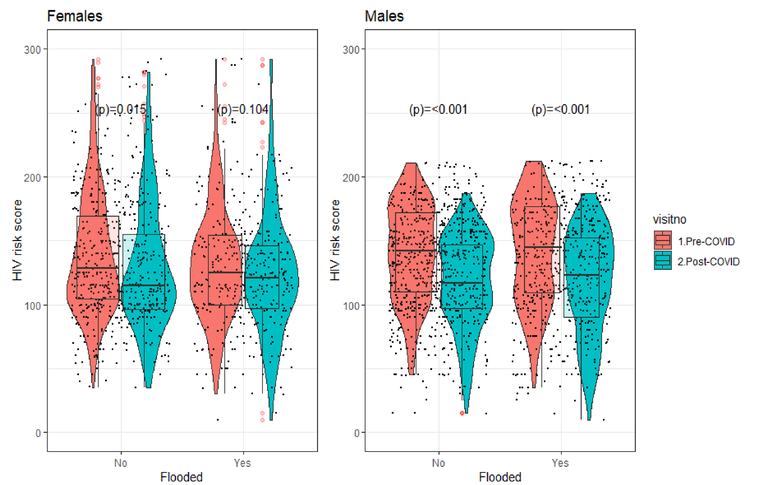


Figure 3: Comparison of overall HIV risk scores among females and males, by exposure to flooding and COVID.

CONCLUSIONS

- Despite a background of high HIV burden, the COVID-19 pandemic and serious flooding had no adverse impact on key HIV risk behaviors and outcomes.
- Understanding what HIV strategies helped maintain good public health outcomes despite extreme conditions may help improve HIV epidemic control during future natural disasters.

ADDITIONAL KEY INFORMATION

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