An adherence intervention to support HIV pre-exposure prophylaxis (PrEP) adherence in HIV serodiscordant couples in Uganda

Christina Psaros, Ph.D.

Massachusetts General Hospital / Harvard Medical School, Boston, MA

Steven A. Safren, PhD.

University of Miami

UNIVERSITY OF WASHINGTON
INTERNATIONAL CLINICAL RESEARCH CENTER

UNIVERSITY OF MIAMI
DEPARTMENT of PSYCHOLOGY

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- *Co-authors*: Jessica Haberer, Kathy Thomas, Elly Katabira, Allen Ronald, Elioda Tumwesigye, Kenneth Mugwanya, Alex Kintu, Michael Enyakoit, Deborah Donnell, Jared Baeten, Connie Celum, David Bangsberg, Steven Safren
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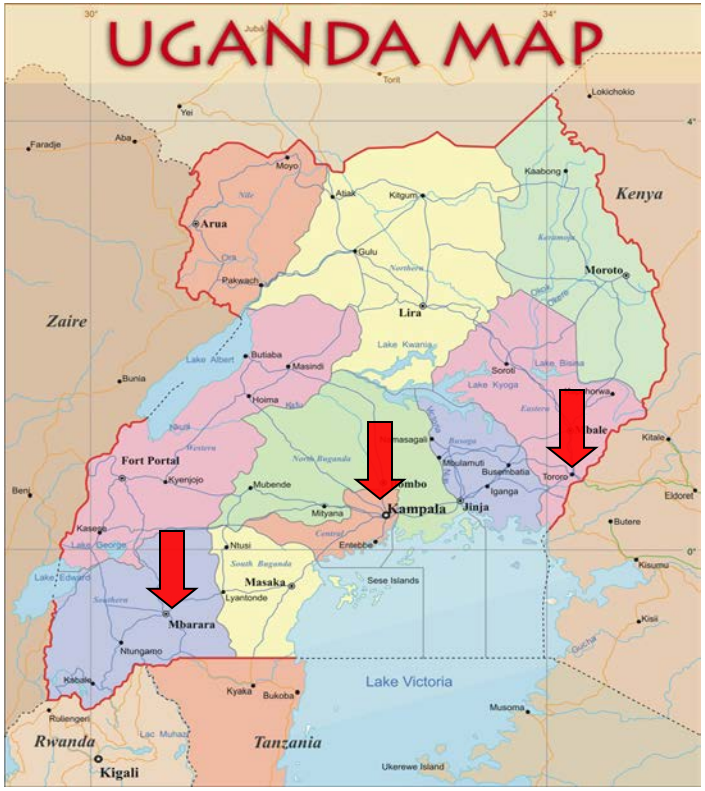
Outline

- Relevant background information about the Partners PrEP study
- Process of developing a PrEP adherence intervention and core components of PrEP adherence intervention
- Overview of process data
- “Lessons learned” and implications for the future

Partners PrEP Study



- Ongoing phase III, double-blind, three-arm, randomized, placebo-controlled trial of daily oral PrEP among 4700 serodiscordant African couples.
  - Ancillary adherence study in Uganda at three of the nine study sites
- DSMB recommended discontinuation of placebo on July 10, 2011.
  - 62% fewer infections in TDF group
  - 73% fewer infections in FTC/TDF group.

Ancillary Adherence Study (AAS)

- Goals: To determine the level, pattern, and predictors of PrEP adherence using objective adherence measures (e.g., MEMS, unannounced home pill counts, random drug levels).

- Findings (*Haberer et al., 2013*):
  - 1,147 HIV negative participants enrolled
  - Median adherence: 99% by UPC and 97.2% by MEMS.
  - PrEP efficacy within AAS was 100% (95% CI 83.7-100%, p<0.001).

Ancillary Adherence Study: Intervention Aim

- To deliver an intervention targeted to HIV-negative participants with low (<80%) unannounced pill count adherence
  - To examine process of intervention delivery and predictors of intervention success
  - Refine and enhance existing adherence counseling messages to better meet specific needs of participants
  - Develop the best adherence counseling protocol based on behavioral science, site experience, and relevant cultural concerns
    - Product to be tested for efficacy in future trials

Intervention Fundamentals

- Intervention based on the work of Safren and colleagues on adherence to ART *(Safren et al., 1997; 2001; 2007)*
  - Combines elements of Cognitive Behavioral Therapy (CBT) and Motivational Interviewing (MI)
- Modular / checklist format:
  - Standardized provision of information while still tailoring counseling messages to individual needs
  - Delivery by a variety of study staff members with various levels of training
  - Provides a reference for future counseling sessions

Intervention Development

- Iterative process of intervention development
  - Informal focus groups with study participants
  - Ongoing feedback from sites and counselors
  - Counselors trained over a two day-period; participate in monthly supervision calls and yearly site visits

Intervention Delivery

- After the intervention is triggered, counseling occured in two phases:
  - With individual on PrEP
    - Monthly contact with interventionist
    - Number of sessions tailored and variable
  - With their HIV infected partner (optional)
    - Participant on PrEP dictated information to be shared with their partner

Intervention Content

- Module 1: Psychoeducation
- Module 2: Brief motivational interviewing
- Module 3: Assessment of family, community, social support and privacy concerns
- Module 4: Assessment of daily routine, and development medication schedule, reminder strategies
- Module 5: Identification of barriers to adherence
- Module 6: Brief problem-solving
- Module 7: Couples session
- Module 8: Follow-up sessions

Enrollment Characteristics

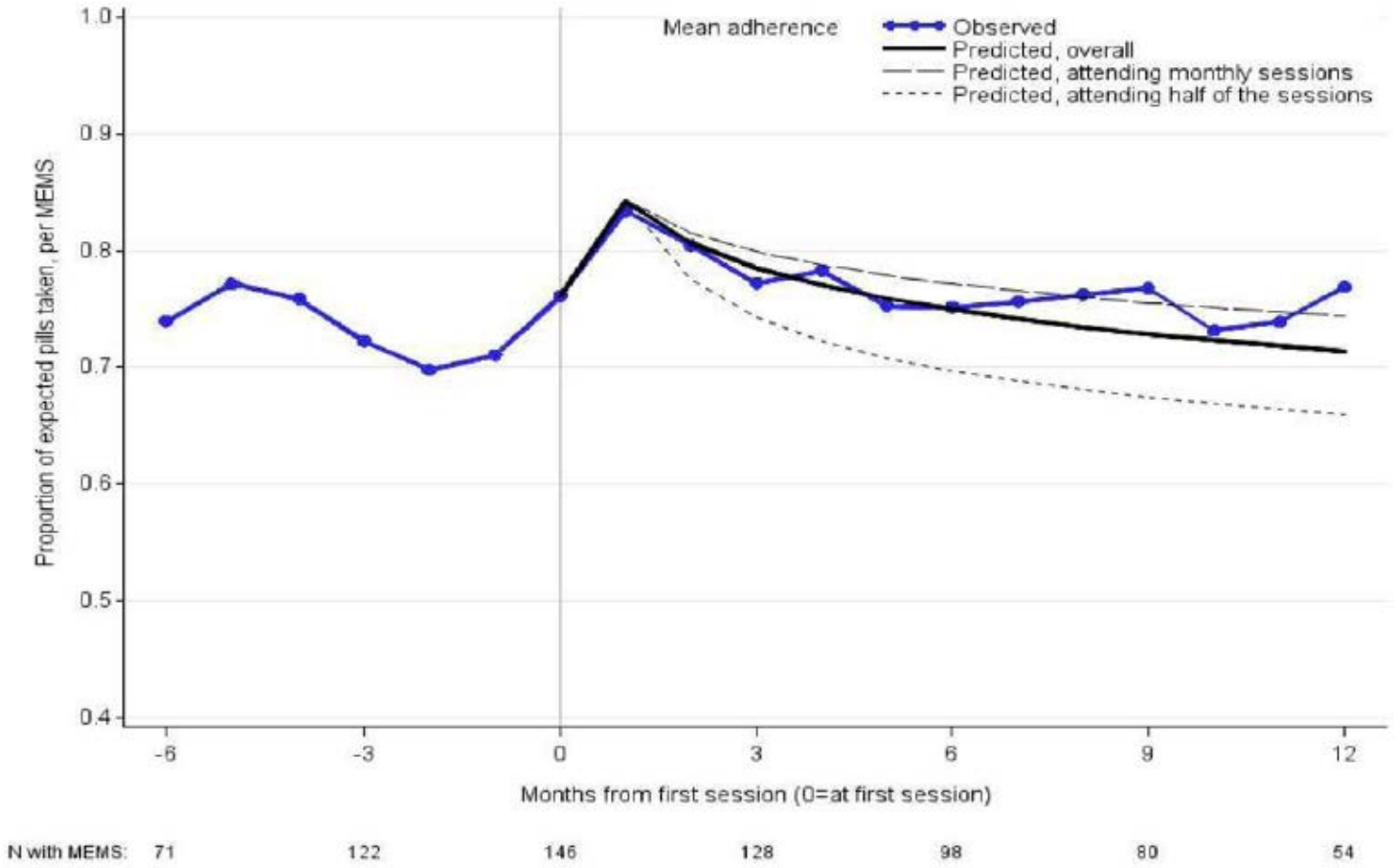
	HIV-1 seronegative enrolled; never triggered intervention N=979	HIV-1 seronegative enrolled; triggered intervention N=168	P-value
Individual characteristics			
Female gender	476 (49%)	63 (39%)	0.01
Age in years	35 (31,41)	32.5 (28,38)	<0.001
Time to clinic	74 (7%)	14 (11%)	
< 30 min	18 (2%)	4 (2%)	
30-60 min	102 (10%)	23 (14%)	
1-2 hours	317 (32%)	54 (32%)	
> 2 hours	542 (55%)	87 (52%)	
Monthly income (in US $)	$11.66 ($3.89, $31.09)	$15.54 ($3.89, $38.86)	0.02
Married	969 (99%)	166 (99%)	0.69
Number of years living together	9 (4,16)	7 (3.2,12)	0.001
Months on PrEP at time of trigger		15.1 (7.0,20.7)	

Mean adherence before and after the first intervention session

	Trigger	Before intervention	P-value**	Post intervention	Difference	P-value**
MEMS (N=146)	64.8%	75.8%	<0.001	84.1%	8.4%	<0.001

*****Adherence is by MEMS caps. Trigger interval is the 28 day period prior to the home visit at which the participant triggered (adherence by unannounced pill count <80%). Immediately before intervention includes the last 28 days of the time after the trigger but before the first intervention, i.e., the time from the home visit to the subsequent clinic visit at which the first intervention session occurred. Post intervention is the 28 day period immediately following the intervention.
** p-value obtained using Wilcoxon signed rank test.

Mean crude and predicted adherence by months



Intervention characteristics

Session Characteristics	Session 1	Session 2	Session 3	Session 4	Sessions 5-9	Sessions 10+ (10-28)
N	153	149	137	130	505 (mean per session = 101)	457 (mean per session=23)
Length of session						
Median (IQR)	40 (30-50)	30 (20-30)	25 (15-35)	20(15-30)	20(15-30)	20(10-30)
Mean	43.5	29.9	27.0	25.0	23.3	21.7
Most frequently endorsed barriers to adherence						
Side Effects	14 (9%)	5 (3%)	3 (2%)	1 (1%)	7 (1%)	2 (0%)
Forgot	69 (45%)	32 (21%)	16 (12%)	23 (18%)	75 (15%)	58 (13%)
Travel	77 (50%)	33 (22%)	23 (17%)	23 (18%)	74 (15%)	55 (12%)
Partner discord	19 (12%)	6 (4%)	2 (1%)	2 (2%)	7 (1%)	2 (0%)
Stigma/privacy	15 (10%)	6 (4%)	3 (2%)	1 (1%)	7 (1%)	3 (1%)
Missing transport	16 (10%)	2 (1%)	2 (1%)	3 (2%)	4 (1%)	7 (2%)
Participants completing a couples session	22 (14%)	9 (6%)	6 (4%)	12 (9%)	32 (6%)	14 (3%)
Counselor estimate of adherence plan(% of participants)*						
None or minimal		18 (12%)	12 (9%)	11 (8%)	39 (8%)	36 (8%)
Some		35 (23%)	24 (18%)	28 (22%)	68 (13%)	35 (8%)
Most/all/more than discussed		96 (64%)	101 (74%)	91 (70%)	398 (79%)	386 (84%)

Conclusions and Future Directions

- Adapting evidenced-based treatment adherence interventions to PrEP adherence, with culturally-relevant topics is feasible and acceptable to counselors and participants.
  - Interventions developed in the clinical trial setting may differ than those delivered in the “real world”.

Conclusions and Future Directions

- Further follow-up will address efficacy and sustainability of increasing adherence after this intervention in those with <80% adherence to daily PrEP.
- Future research must identify PrEP users with low adherence for intervention and determine optimal duration of intervention to maximize PrEP effectiveness.
- Such work will increase confidence in interpretation of results from biomedical HIV prevention trials and will facilitate adherence and proper use of these strategies as PrEP becomes more available.