

Utilizing real-time adherence monitoring devices among HIV+ pregnant and postpartum women: Challenges encountered in the Uganda WiseMama study

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Abstract #95

Mary Bachman DeSilva,¹ Lora Sabin,¹
Nafisa Halim,¹ Harriet Chemusto,²
Julia Gasuza,² Joseph Kyebuzibwa,²
Allen L Gifford,¹ Davidson H Hamer,¹
Rachael Bonawitz,¹ Seggane Musisi,³
Barbara Mukasa,² Justin Tepe,¹
Kimberly Barrett,¹ Jenna Menefee,¹
Lisa J Messersmith¹

¹Boston University, Boston, MA, USA

²Mildmay Uganda, Kampala, Uganda

³Makarere University, Kampala, Uganda



Conflict of Interest Disclosure

Mary Bachman DeSilva, ScD, MS

has no real or apparent
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Background

- HIV prevalence in Uganda:
 - 8.2% among women of childbearing age
 - 7.3% in general population, 6.3% for men.
- WHO's Option B+ initiative: provision of lifelong ART to all HIV+ pregnant women.
 - Option B+ is current standard of care in Uganda
 - High retention in HIV care and ART adherence are critical for success (women's health and elimination of mother-to-child transmission (MTCT) of HIV)
- Obstacle: HIV+ pregnant and postpartum women (PPPW) face particular challenges related to retention in care and adherence.

Previous research and real-time feedback

- Real-time wireless pill containers (WPC)
 - Web-linked medication container that sends electronic signal to central server at each opening
 - Allows reminders to be sent at specific times
- Patient experience with WPC
 - Feasible/acceptable in Uganda (Haberer et al 2010)
 - Feasible/acceptable in southern China (2013)
 - WPC-based triggered reminders + data-informed counseling improved ART adherence in China (CATS)



*Given the need for adherence support among
PPPW, our main study question...*

Could real time reminders
(via WPC) combined with
data-informed counseling
improve ART adherence in this
vulnerable population?

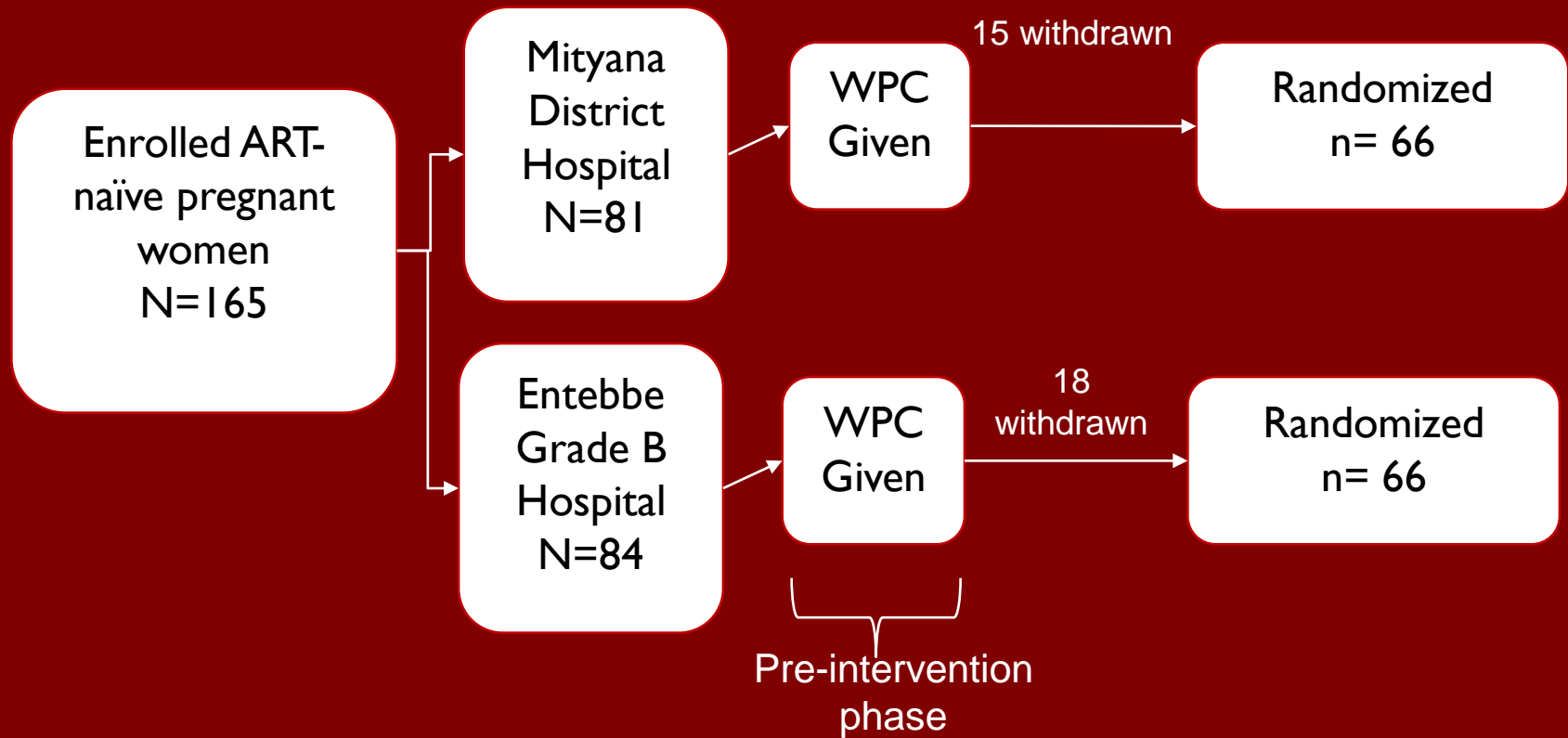
WiseMama RCT: Ongoing

Feasibility component:

Primary Objective

- Assess the feasibility and acceptability of use of real-time monitoring devices among pregnant and postpartum women

WiseMama Study Overview



Methods: Enrollment



- 165 ART-naïve pregnant women, >18 years, attending 2 antenatal clinics (ANC):
 - Entebbe Grade B Hospital
 - Mityana District Hospital
- Once daily regimen: (tenofovir, 3TC, efavirenz)
- Subjects given a WPC for daily use with one HIV medication for ~ 8-10 months total

Methods: Data Collection

- Monitored subjects' adherence using WPC for 1 month (pre-intervention period).
- Investigated all adherence lapses ≥ 48 hours via phone follow-up with women and WPC website.
- Surveys administered at enrollment and Month 1 clinic visit (end of pre-intervention period).
- After pre-intervention period, women randomized to intervention (reminders + counseling) or control (usual care).

Methods: Data analysis

- Lapse causes
 - categorized as behavioral or technical
 - further subcategorized based on subject explanation or data from WPC website
- Experiences with device (Month 1 Survey)
 - Proportions calculated for quantitative questions
 - Open-ended questions analyzed by theme
- Adherence to ART (as measured by WPC) calculated for the one month pre-intervention period

Characteristics at baseline (N=165)

Characteristic	N (%) or Mean (SD)
Age (years)	25.1 (5.6)
Married	118 (74.2)
Education level completed	
Primary	65 (40.6)
Secondary school	83 (51.9)
First pregnancy	44 (29.0)
Multiparous women, previous pregnancies	2.5 (1.8)
Someone else knew status at enrollment	62 (38.8)
Disclosed to husband/partner at enrollment	41 (26.1)
Completed pre-intervention period	132 (80.0)
Adherence, pre-intervention period (%)	76.0 (24.9)

Reasons for Signal Lapses

Category	N	% in category
Total signal lapses	179	
Behavioral	72	(40.2)
Intentional nonuse - side effects	21	(29.2)
Fear of mixing meds	2	(2.8)
No Pills	3	(4.2)
General	8	(11.1)
Fear of Disclosure	13	(18.1)
Inconvenience	14	(19.4)
Forgetting to take a dose	4	(5.6)
Life event	4	(5.6)
Lack of food	2	(2.8)
Forgot device	1	(1.4)
Technical	58	(32.4)
Signal strength	41	(70.7)
Battery	4	(6.9)
Faulty device	9	(15.5)
Sim card	4	(6.9)
Unknown	49	(27.4)

WPC experience: Quantitative findings

- 98/126 (77%) found device “very easy” to use.
- 100/128 (78%) found it convenient to carry.
- 114/128 (89%) were “very positive” about real time monitoring.
- 30/126 (24%) worried about disclosure due to device.
- Reports of disclosure due to device: N=6 women.

WPC use: Positive experiences

- “The container is better than the normal pill container. Even if you carry it in public, people may not notice it’s a pill container.”
- “I have disclosed to my husband. In fact, he asked if he can also be given a device.”
- “Knowing I am being monitored makes me feel special because I know they care. That gives me the courage to take my medicine.”

WPC use: Negative responses

- “The blinking makes it difficult since I do not want people to know my status. When it blinks I am worried someone might begin asking questions.”
- “I keep it away from my husband. I fear him seeing it because I did not disclose to him.”
- “I had to hide it from my husband... I think he saw it and no longer wants to talk to me.”

Conclusions

- Behavioral and technical factors represented substantial challenges to real-time, web-linked monitoring of adherence among pregnant women attending two Ugandan clinics.
- Concerns about medication side effects and disclosure require further exploration.
- Before widespread use, technical issues require resolution.

WiseMama Study Team & Acknowledgements

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- Lora Sabin (PhD)
- Lisa J Messersmith (PhD)
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