



**Contextual factors influencing implementation of HIV treatment support strategies for female sex workers living with HIV in South Africa: A qualitative analysis using the Consolidated Framework for Implementation Research**

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# Background

In South Africa, heterogenous HIV treatment outcomes exist among those living with HIV.

62% of female sex workers (FSW) living with HIV

- Half on antiretroviral therapy (ART)
- <40% are virally suppressed



# Siyaphambili Study

Tested two adaptive HIV treatment support strategies aimed to promote retention and viral suppression among 777 FSW living with HIV and not virally suppressed



Decentralized Treatment  
Provision (**DTP**)



Individualized Case  
Management (**ICM**)



# Research Objective

To identify implementation determinants of the HIV support strategies tested in Siyaphambili and to explore whether barriers and facilitators differentially influenced strategy implementation using the Consolidated Framework for Implementation Research (CFIR)

*Treatment support strategies tested in Siyaphambili:*

- Decentralized treatment provision (DTP)
- Individualized case management (ICM)



# Methods

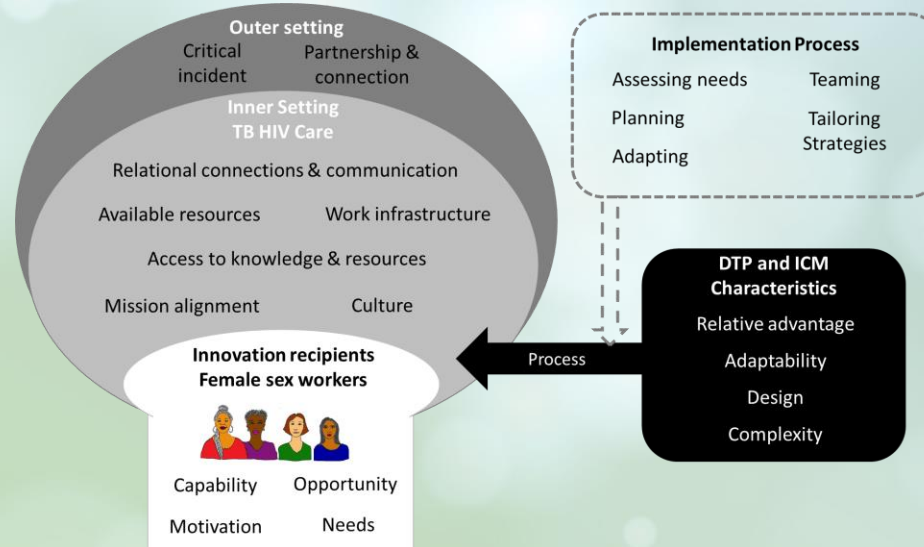
- **In-depth interviews** with FSW from the Siyaphambili Study (n=36)
  - Maximum variation, purposeful sampling
    - Strategy assignment
    - Strategy engagement
    - Clinical outcome at last viral load
- **Key informant interviews** with implementors (n=12)
- Data were collected between **March 2021 – January 2022**
- **Semi-structured interview guide** used based on the CFIR



# Methods - analysis

Data were deductively coded in Atlas.ti based on CFIR domains/constructs.

CFIR analysis, identifying determinants of implementation

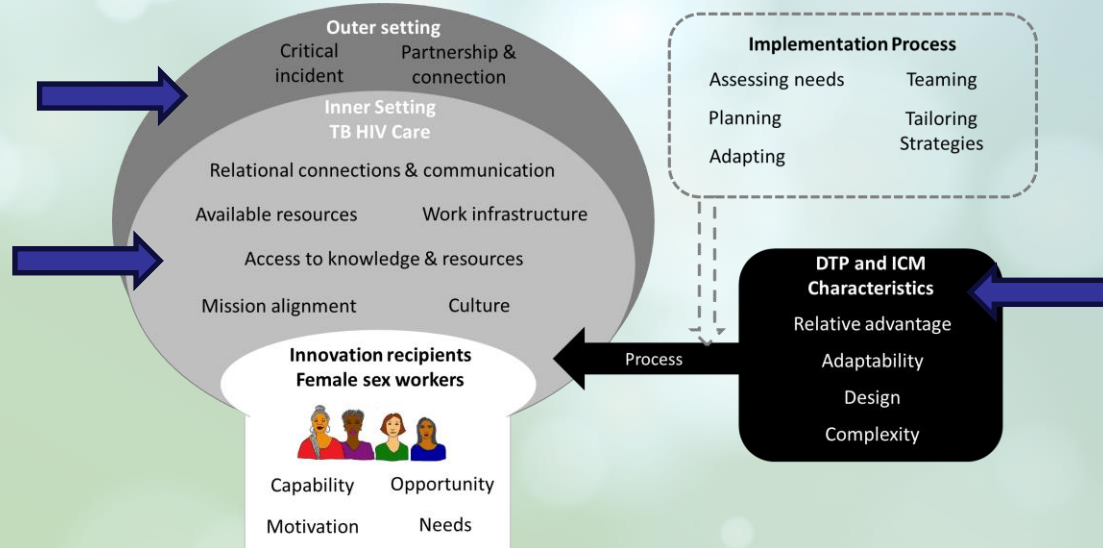




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CFIR analysis, identifying determinants of implementation

- Rated valence and strength across CFIR constructs and strategies

Rating	Criteria
+	Facilitated the implementation of strategies
-	Hindered the implementation of strategies
+ / -	Both facilitated and hindered (mixed effects) implementation

*Barriers and facilitators rated for strength by valence: -2, -1, +1, or +2, with  $\pm 2$  representing the strongest influence on the implementation of strategies*





# Results

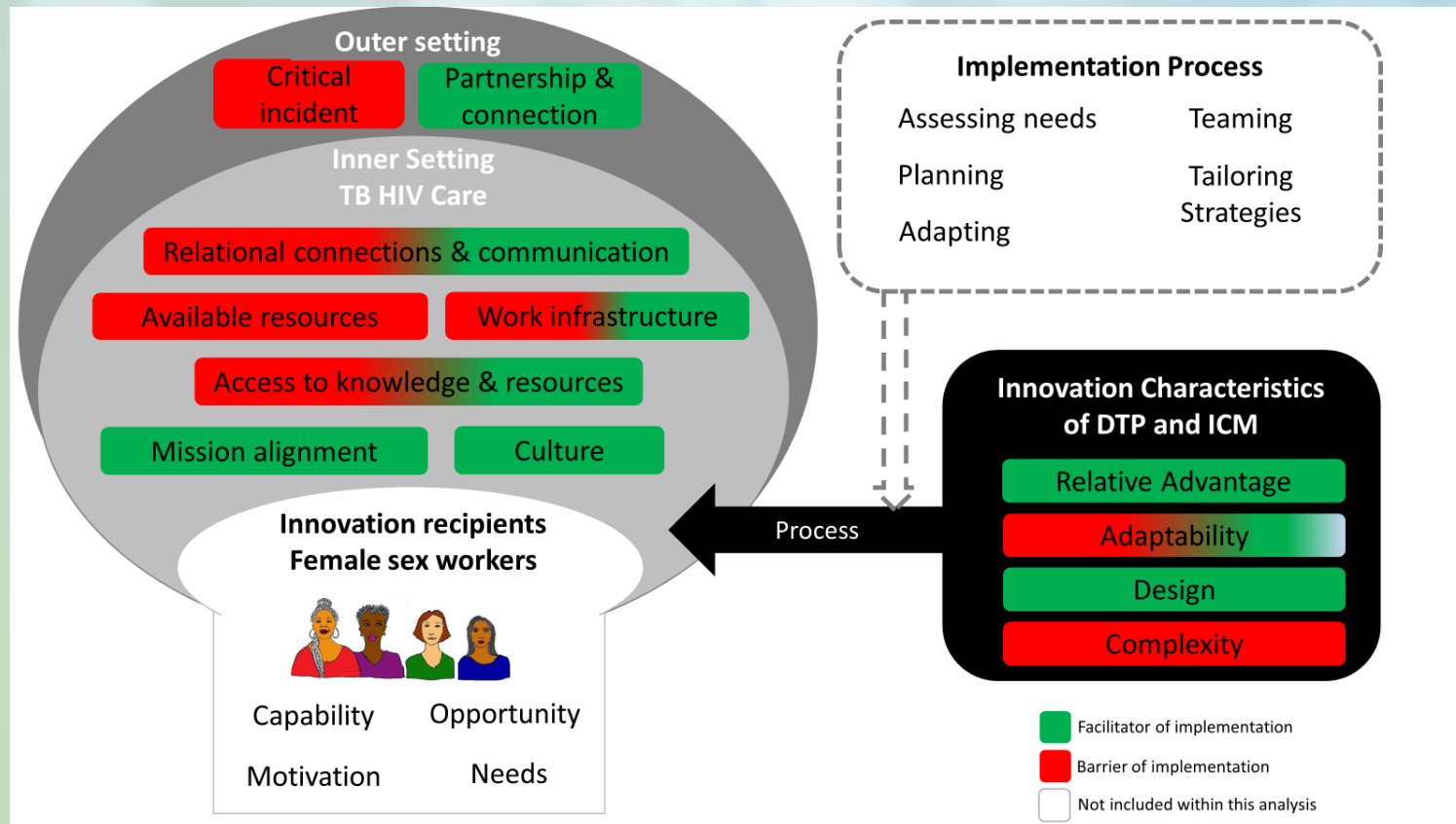
## **36 FSW** participating in the Siyaphambili trial

- Mean age was 35 years old (range: 18 – 61 years)
- 88% operated from indoor venues (brothel/guest house/private home)

## **12 implementors** supporting Siyaphambili implementation

- Nurses, case managers, peer navigators, drivers, team leaders
- 83% female
- 83% over the age of 30 years old

# Results





CFIR Domain and Construct	Implementation Determinant		Key Theme	Illustrative Quotes
	Overall valence	Overall strength		
<b>Innovation characteristic: Relative advantage</b>				
Facilitator	+2	The strategies addressed treatment-related barriers that clinic-based care could not.	<i>Receiving it is way better because there are no neighbors that look at you and you avoid standing in those ridiculous long queues at the clinic, it literally takes less than 20 minutes.</i> – FSW receiving the DTP (then DTP+ICM), IDI-08	
<b>Innovation characteristic: Design</b>				
Facilitator	+2	Strategies were acceptable to implementors and FSW participants.	<i>[ICM]...felt like I was talking to a sister... she would motivate me and give me ideas of how to tackle certain situations... I have had the same case manager throughout the study...she attended to all my needs...</i> –FSW receiving ICM, IDI-09	
<b>Innovation characteristic: Adaptability</b>				
Facilitator	+2	Strategy implementation was tailored to FSW needs and available resources.	<i>I'd buzz when I didn't have airtime and they'd call me back fast. I'd explain what I needed and they would help me.</i> – FSW receiving ICM (then SoC), IDI-01	
Barrier	-2	Modifications to strategy implementation caused bottlenecks in implementation.	<i>...due to the nature of my work, I moved and lost contact with the people from the study. After a few months they found me and continued to bring the treatment to me at my new work place.</i> –FSW receiving DTP (then DTP+ICM), IDI-06	
<b>Innovation characteristic: Complexity</b>				
Barrier	-2	Strategies were challenging to deliver as designed.	<i>With <u>outdoors [venues]</u>, most of the participants are on the streets. When we try to stop next to the participant a client's car will come and stop in front of you and take the participant with them. We then have to make a plan to come back because we won't wait for her while we have to attend to other participants... [but with <u>indoor venues</u>] Most of the time we call the clients to the car. Sometimes the client [FSW] will refuse to come to the car. In that case, you'll have to assess for yourself whether it is safe for you to go in there. There are sites where you will have to go to their rooms if they are tired after a long night at work.</i> – Implementor, KII-03	



CFIR Domain and Construct	Implementation Determinant		Key Theme	Illustrative Quotes
	Overall valence	Overall strength		
<b>Inner setting: work infrastructure</b>				
Facilitator	+2		Staffing composition, responsibilities, and collaboration supported implementation and associated activities.	<i>Being from the streets made me familiar with the sites we work in. It helped me with learning how to follow up on participants and how to feel safe while doing it. Also knowing how to communicate with different people helps. – Implementor, KII-07</i>
Barrier	-2		Staffing levels and the overlapping responsibilities of implementors challenged functional performance.	<i>DTP is not something that is easy to implement....It's a small team with a lot of [FSW]. The whole study design of the drop off is correct but... there needs to be multiple teams delivering to different people for the intervention to be effective. – Study team member, KII-11</i>



# The valence and magnitude of innovation characteristics and inner setting constructs by Siyaphambili strategies

CFIR Domain	CFIR Construct	Overall valence	DTP	ICM	Distinguishing Construct between DTP and ICM
Innovation characteristics					
	Relative advantage	+2/-1	+2/-1	+2	Weakly
	Design	+2	+2	+2	Not
	Adaptability	+2/-2	+2/-2	+2/-2	Not
	Complexity	-2	-2	-1	Weakly
Inner setting					
	Culture	+1	+1	+1	Not
	Mission alignment	+1	+1	+1	Not
	Work infrastructure	+2/-2	+2/-2	+2/-2	Not
	Available resources	-1	-2	-1	Weakly
	Access to knowledge and resources	+1/-1	+1/-1	+1/-1	Not
	Relational Connections and Communication	+1/-1	+1/-1	+1/-1	Not
Outer setting					
	Critical incident	-1	-1	-1	Not
	Partnerships and connections	+1	+1	+1	Not



# Discussion

There are increasing calls for differentiated services to address the needs of those not being effectively reached and retained in current, ongoing HIV treatment program.

This research highlights:

- **Real-world strategy implementation is challenging**, given differing contextual considerations.
- Unintended implementation challenges resulted from the **intersection of innovation characteristics and complexities playing out within the inner and outer settings**.
- Moving forward necessitates **identifying feasible to implement strategy components** which sufficiently support sustainment of viral suppression<sup>14</sup>



# Conclusion

Given the potential benefits of differentiated service delivery strategies, identifying implementation barriers and facilitators is critical to inform future strategy design and implementation.

Addressing innovation complexity and service delivery infrastructure to effectively support FSW living with HIV is central to optimizing the individual and population-level impact of these interventions.



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Clinical Trial registration: NCT03500172

# Thank you

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# References

- UNAIDS. Key Population Atlas Dashboard: Joint United Nations Programme on HIV/AIDS. 2021 [cited 2023 5/31/2023]; Available from: <https://kpatlas.unaids.org/dashboard>.
- UNAIDS Data 2021. Geneva: Joint United Nations Programme on HIV/AIDS;2021.
- Comins, C., Guddera, V., Young, K., Mcingana, M., Mishra, S., Phetlhu, D.R., Hausler, H., Baral, S., Schwartz, S., Structural barriers informing implementation strategies for antiretroviral therapy among female sex workers living with HIV in Durban, South Africa. 2020.
- Comins CA, Schwartz SR, Phetlhu DR, et al. Siyaphambili protocol: An evaluation of randomized, nurse-led adaptive HIV treatment interventions for cisgender female sex workers living with HIV in Durban, South Africa. *Research in nursing & health*. 2019;42(2):107-118
- Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implementation Science*. 2009;4(1):50.Pawson & Tillery (1997).
- Damschroder, L.J., Reardon, C.M., Widerquist, M.A.O. et al. The updated Consolidated Framework for Implementation Research based on user feedback. *Implementation Sci* 17, 75 (2022). <https://doi.org/10.1186/s13012-022-01245-0>
- Proctor E, Silmere H, Raghavan R, Hovmand P, Aarons G, Bunger A, Griffey R, Hensley M. Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Adm Policy Ment Health*. 2011 Mar;38(2):65-76. doi: 10.1007/s10488-010-0319-7. PMID: 20957426; PMCID: PMC3068522.
- VanDevanter N, Kumar P, Nguyen N, et al. Application of the Consolidated Framework for Implementation Research to assess factors that may influence implementation of tobacco use treatment guidelines in the Viet Nam public health care delivery system. *Implementation science* : IS. 2017;12(1):27.
- Garbutt JM, Dodd S, Walling E, Lee AA, Kulka K, Lobb R. Barriers and facilitators to HPV vaccination in primary care practices: a mixed methods study using the Consolidated Framework for Implementation Research. *BMC family practice*. 2018;19(1):5



# Thank you

*Please contact me with questions or comments:*  
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