



## **Promoting adherence to PrEP via digital Communication: the PREPTA Project-Tanzania**

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**Date: April-2021**

# Background: HIV burden among MSM & FSW

## East and Southern Africa –HIV Incidence

- FSW- are 10 times higher than among general pop. (2)
- MSM accounted for 4% of new infections in the region in 2018(1)

## Tanzania- Estimated HIV prevalence

- General pop-4.8% (1)
- MSM - 25 percent (range: 18–35%) (4)
- FSW- 26 percent (range: 14–37%) (4)

1. USAIDS. UNAIDS DATA 2020.

2. UNAIDS: Women and Girls 2018

3. Hessou PHS, Glele-Ahanhanzo Y, Adekpedjou R, Ahouada C, Johnson RC, Boko M, et al. Comparison of the prevalence rates of HIV infection between men who have sex with men (MSM) and men in the general population in sub-Saharan Africa: A systematic review and meta-analysis-2019

4. Mpondo BCT, Gunda DW, Kilonzo SB. HIV Epidemic in Tanzania: The Possible Role of the Key Populations. AIDS Res Treat [Internet]. 2017 Aug 17

# Background: Preventive Strategies

- Several strategies –HIV new infections prevention
  - Behavioural, structural, and biomedical intervention- pre-exposure prophylaxis (PrEP) (1)
- PrEP-TRUVADA (Tenofovir disoproxil fumarate and emtricitabine)-2012
  - Population with  $\geq 3/100$ py incidence of HIV<sup>(2)</sup> .
- PrEP is effective to about 99% if highly adhered (Daily intake)- among high risk (3)

1. UNAIDS. Combination HIV Prevention: Tailoring and Coordinating Biomedical, Behavioural and Structural Strategies to Reduce New HIV Infections. 2010

2. PWHO. Guidance on oral pre-exposure prophylaxis (rEP) for serodiscordant couples, men and transgender women who have sex with men at high risk of HIV: recommendations for use in the context of demonstration projects. [Internet]. 2012

3. Grant RM, Lama JR, Anderson PL, McMahan V, Liu AY, Vargas L, et al. Preexposure Chemoprophylaxis for HIV Prevention in Men Who Have Sex with Men. N Engl J Med [Internet]. 2010 Dec 30 [cited 2019 Dec 5];363(27):2587–99

# KPs & PrEP Adherence in Tanzania

There is high acceptance but poor adherence to PrEP among KPs

- PrEP adherence
  - US and China is 62% and 64.3%, respectively (1,2)
  - Among women in SSA-28.5% (3)
  - Kenya (MSM) - 40 % (4)
- Tanzania, plans to roll out PrEP -Key and vulnerable populations (5).
- However, *poor adherence* has shown to be a challenge in demonstration project (5)
  - Tanzania-<50% (5)

1. Hosek SG, Siberry G, Bell M, Lally M, Kapogiannis B, Green K, et al. The acceptability and feasibility of an HIV preexposure prophylaxis (PrEP) trial with young men who have sex with men. *J Acquir Immune Defic Syndr*. 2013 Apr 1;62(4):447–56.
2. Qu D, Zhong X, Xiao G, Dai J, Liang H, Huang A. Adherence to pre-exposure prophylaxis among men who have sex with men: A prospective cohort study. *Int J Infect Dis [Internet]*. 2018;75:52–9. Available from: <https://doi.org/10.1016/j.ijid.2018.08.006>
3. FEM-PrEP-study
4. Mugo PM, Sanders EJ, Mutua G, van der Elst E, Anzala O, Barin B, et al. Understanding Adherence to Daily and Intermittent Regimens of Oral HIV Pre-exposure Prophylaxis Among Men Who Have Sex with Men in Kenya. *AIDS Behav [Internet]*. 2015 May 29 [cited 2019 Oct 2];19(5):794–801.
5. NACP, 2017 (Unpublished data)

# Background: mHealth interventions

## Sub-Saharan Africa (SSA)

- Improve health services delivery (1-3)
  - Maternal and neonatal care
- Health Worker Communication (4)
- Health education(4)
- Drug compliance (5)

## Tanzania

- Improving antenatal care & drug supply (6 &7)
- prevent mother to child HIV transmission (8)
- Promoting family planning (9)
- *Drug compliance-No data*

1. Adepoju I-OO, Albersen BJA, De Brouwere V, van Roosmalen J, Zweekhorst M. mHealth for Clinical Decision-Making in Sub-Saharan Africa: A Scoping Review. JMIR mHealth uHealth [Internet]. 2017 Mar 23 [cited 2020 Feb 9];5(3):e38.
2. Lee S, Cho Y, Kim S-Y. Mapping mHealth (mobile health) and mobile penetrations in sub-Saharan Africa for strategic regional collaboration in mHealth scale-up: an application of exploratory spatial data analysis. Global Health [Internet]. 2017 Dec 22 [cited 2019 Sep 5];13(1):63.
3. Nglazi MD, Bekker LG, Wood R, Hussey GD, Wiysonge CS. Mobile phone text messaging for promoting adherence to anti-tuberculosis treatment: A systematic review. BMC Infect Dis. 2013 Dec 2;13(1)
4. Betjeman, T. J., Soghoian, S. E. and Foran, M. P. (2013) 'mHealth in Sub-Saharan Africa.', *International journal of telemedicine and applications*. Hindawi Limited, 2013, p. 482324. doi: 10.1155/2013/482324.
5. Siedner MJ, Santorino D, Haberer JE, Bangsberg DR. Know your audience: predictors of success for a patient-centered texting app to augment linkage to HIV care in rural Uganda. J Med internet Res [Internet]. 2015;17(3):e78
6. Lund S, Nielsen BB, Hemed M, Boas IM, Said A, Said K, et al. Mobile phones improve antenatal care attendance in Zanzibar: a cluster randomized controlled trial. BMC Pregnancy Childbirth [Internet]. 2014 Dec 17 [cited 2019 Oct 1];14(1):29. Available from: <http://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/1471-2393-14-29>
7. Bull S, Thomas DS, Nyanza EC, Ngallaba SE. Tanzania Health Information Technology (T-HIT) System: Pilot Test of a Tablet-Based System to Improve Prevention of Mother-to-Child Transmission of HIV. JMIR mHealth uHealth [Internet]. 2018 Jan 15 [cited 2019 Sep 5];6(1):e16
8. L'Engle KL, Vahdat HL, Ndakidem E, Lasway C, Zan T. Evaluating feasibility, reach and potential impact of a text message family planning information service in Tanzania. Contraception [Internet]. 2013;87(2):251–6. Available from: <http://dx.doi.org/10.1016/j.contraception.2012.07.009>
9. Barrington J, Wereko-Brobby O, Ward P, Mwafongo W, Kungulwe S. SMS for Life: A pilot project to improve anti-malarial drug supply management in rural Tanzania using standard technology. Malar J. 2010;9(

# PREPTA PROJECT

## PREPTA

- Pragmatic Trial for HIV *Pre-Exposure Prophylaxis roll out in Tanzania* ("PREPTA")

## Broad objective

- To evaluate the role of mobile Health platform and peer to peer mentoring in improving adherence to HIV pre-exposure prophylaxis among high risk population in Tanzania.

## Overall Project design

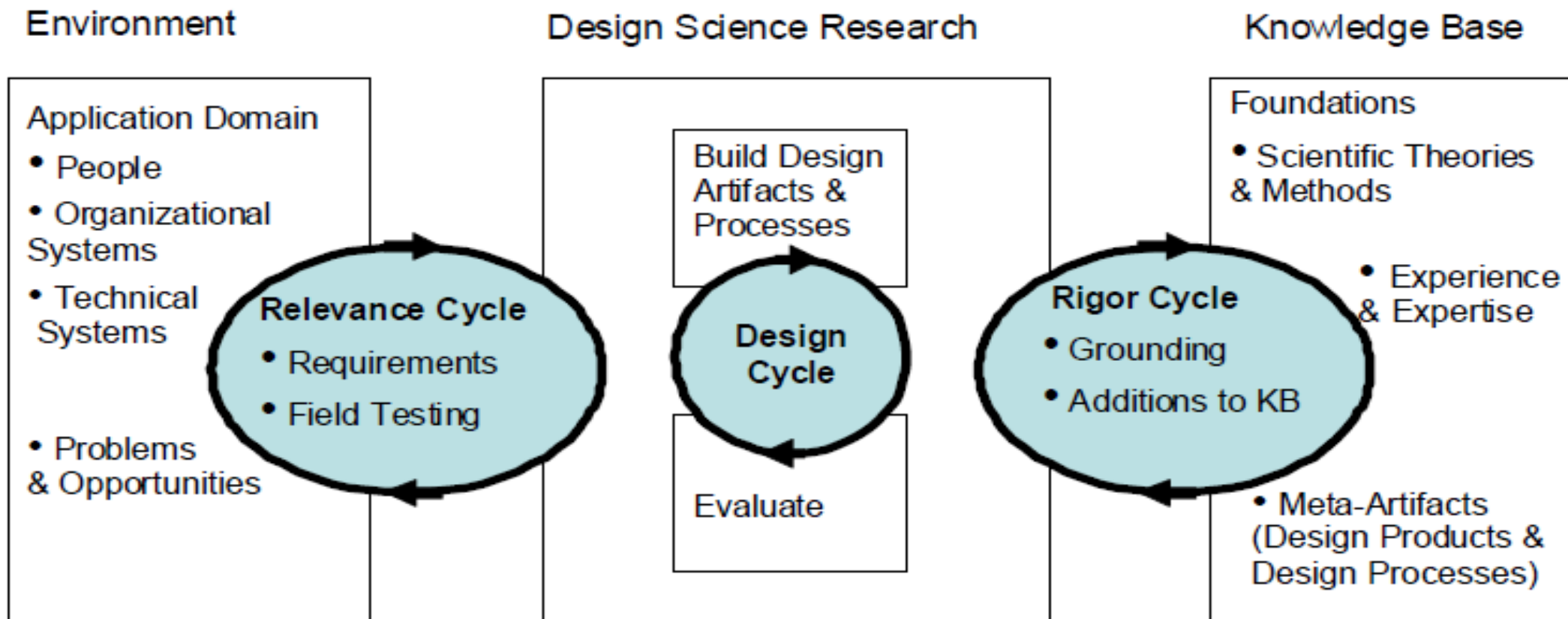
- Pragmatic quasi-experimental design consisting of both qualitative and quantitative methods to assess the effectiveness of the intervention in two populations (FSW & MSM)

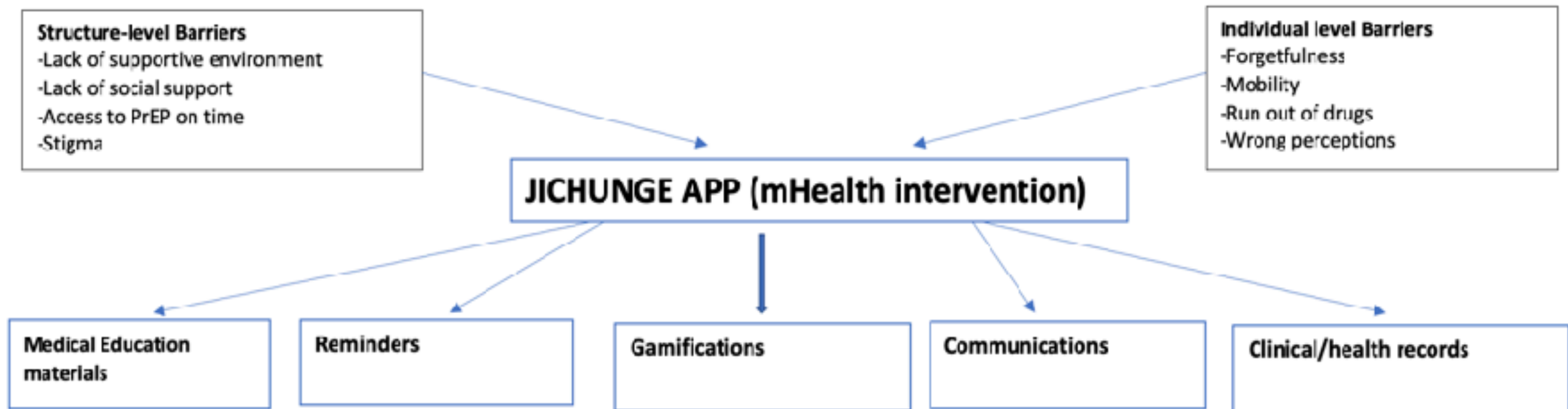
## Outcome Variables & Thematic fields

- *Primary* : PrEP adherence
- **Secondary** : HIV incidence, reduced proportions of KP members who report stigma and discrimination experiences, improved attitude towards PrEP, and App usage
- Perceptions and experiences

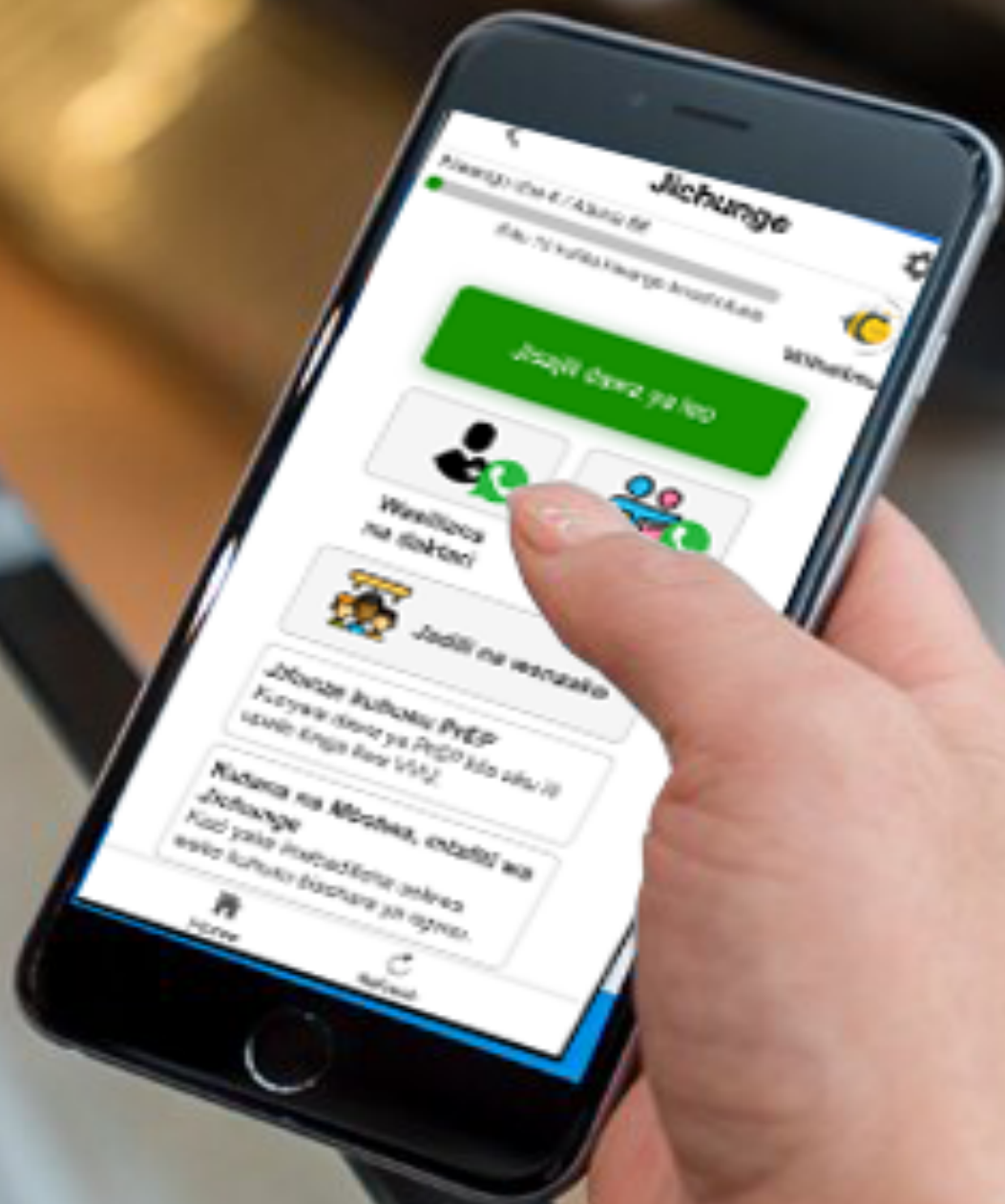
# Background: PREPTA Project and mHealth App

## Design: The Information System Research Framework









# Jichunge



Kiwango cha 4 / Alama 88



Siku 10 kufika kiwango knachofuata



Wilhellmuss

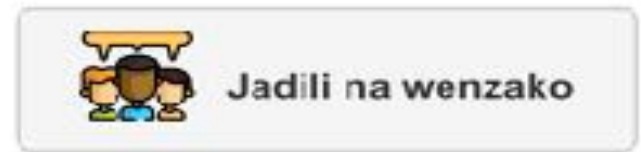
Jisajili dawa ya leo



Wasiliana na daktari



Wasiliana na rafiki



Jadili na wenzako

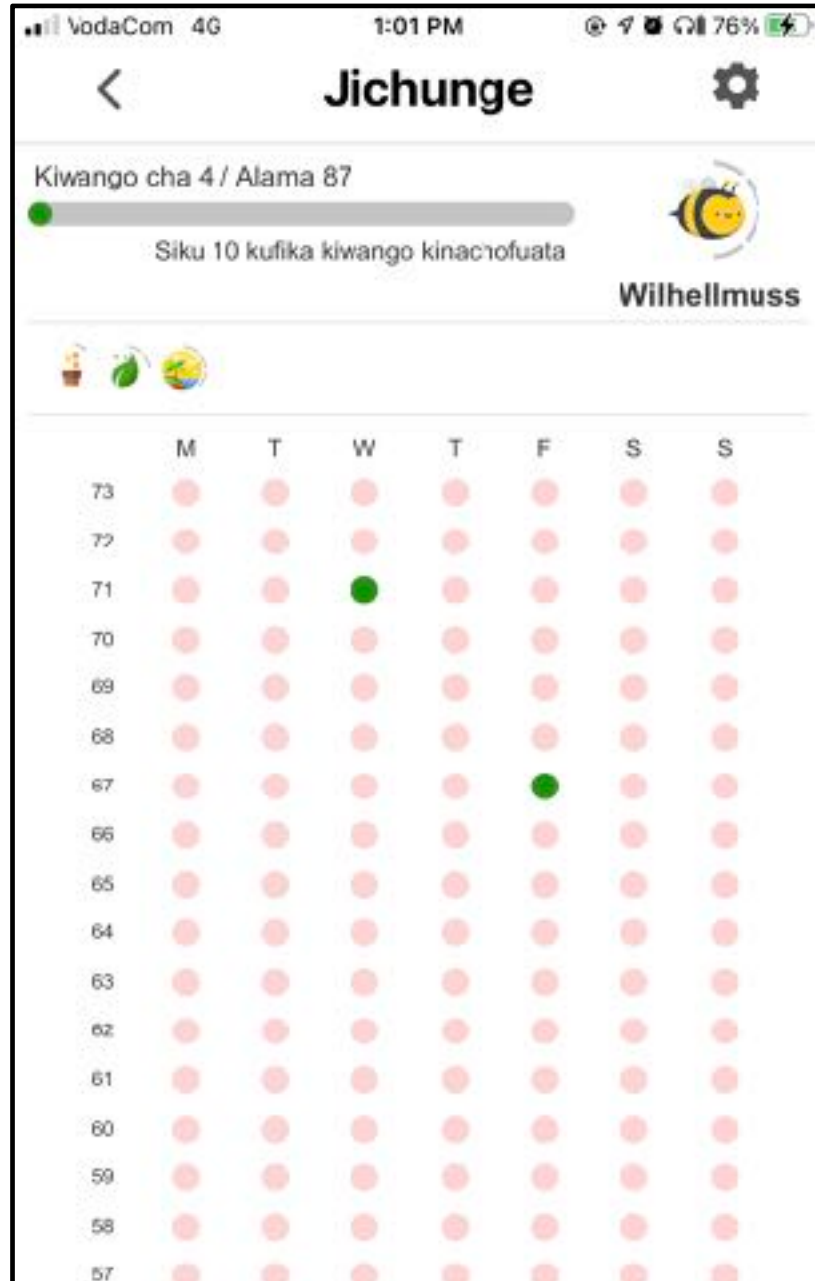
**Jifunze kuhusu PrEP**  
Kunywa dawa ya PrEP kila siku ili upate kinga kwa VVU.

**Kutana na Mbotwa, mtafiti wa Jichunge**  
Kazi yake imebadilisha uelewa wake kuhusu biashara ya ngono.





# Jichunge App-Personal daily intake PrEP Weekly status



# Conclusion

The participatory design approach in the development of m-Health apps is useful

- Identification and validation of population specific functional features
- Potential to improve usability and as such, ensure future health impact

The *Jichunge* app, through this participatory process

- Taken end-user needs into account, eliciting enthusiasm regarding its' potential role in supporting PrEP adherence for HIV and related behavioural change promotion.

# Funding

- The PREPTA project is partly supported by the **Research Council of Norway through the Global Health and Vaccination Programme (GLOBVAC)**, project number 285361.
- The project is also part of the **European & Developing Countries Clinical Trials Partnership (EDCTP2)** programme supported by the European Union.

# Key messages

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Increasing accessibility of mobile phone and internet provide opportunity of possible mHealth interventions in Low-income countries

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User involvement in the design and evaluation of the mHealth app provides an opportunity to incorporate social, cultural, and community-specific features that may ensure usability

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The study :- How mHealth works, How people engage, how effective it can be (if it can real increase adherence)

**THANKS FOR LISTENING**