



TOHARA JOURNEY: INTEGRATING A HUMAN-CENTERED DESIGN APPROACH INTO A MOBILE APP TO ENHANCE UPTAKE OF VOLUNTARY MEDICAL MALE CIRCUMCISION IN TANZANIA

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BACKGROUND

Findings from three randomized control trials showed 60% lowered HIV incidence in circumcised men compared to the uncircumcised.^{1,2} According to the World Health Organization (WHO), per every 83 male circumcisions, one HIV incidence is averted. Therefore, voluntary medical male circumcision (VMMC) has the potential to save millions of lives and billions of dollars in averted HIV treatment costs.³ In 2016, a WHO and UNAIDS consultation highlighted that the greatest short-term impact on HIV incidence would be obtained by expanding circumcision coverage in the 20–34 age group, as this is the age range at which men are entering the highest risk of HIV infection.^{3,4}

However, since its launch in 2010, implementers of the Tanzania national VMMC program have noted that over 70% of clients are between the ages of

10 and 19, raising questions about what additional efforts would be required to recruit men aged 20 and above.⁵

IntraHealth International in collaboration with its partners Tanzania Youth Alliance (TAYOA) and *Afya Plus* are implementing Tohara Plus, a five-year VMMC project (2016-2021) in Mwanza, Mara, Simiyu, and Shinyanga regions. The project is funded by the President's Emergency Plan for AIDS Relief (PEPFAR) through the Centers for Disease Control and Prevention (CDC) and supports the Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDGEC) and the President's Office Regional Administration and Local Government (PORALG) to strengthen and scale-up a comprehensive package of quality, safe VMMC services among adolescents and adult men 15 years and above to reach 80% prevalence in the targeted subnational units (SNUs) by 2021.



To further accelerate the uptake of VMMC services among the priority adult men aged 20 years and above, in 2018 Tohara Plus developed, piloted, and integrated the use of a mobile application called "Tohara Journey." The design and architecture of Tohara Journey's messages and flow patterns was informed by the human-centered design (HCD) behavioral approach. The use of this app offers a convenient tool for community mobilizers to recruit, enroll, book, and reinforce post-procedure care and follow-up on adult and high-risk men for VMMC services as well as helping clients and prospective clients to receive the information they require and address barriers to VMMC uptake.

OUR APPROACH

Infrastructure and technology: Tohara Journey is programmed under the Apache Cordova framework, which is a free, open-source web-based tool built with Hypertext markup language (HTML), cascading style sheets (CSS), and JavaScript content to accomplish the front-end look. The use of Apache Cordova allows for linkage with other mobile applications such as short message services (SMS) and interactive voice response (IVR). Tohara Journey works better with devices that run Android (OS) version 5 & 6 plugins.

Major functionalities: The system operates in web-based and application functionalities:

1. Application functionalities:
 - a. User login
 - b. User registration
 - c. Capture client's data
 - i. Client's physical address
 - ii. Gauge client's understanding of VMMC
2. Web-based system functionalities:
 - a. User login
 - b. User registration
 - c. User management (add/delete/update)
 - d. Location management (add/delete/update)
 - e. System variables management
 - f. All stages variables management
 - g. Display all stages dashboard

Requirements:

1. Developer: Programming skills; specifically, Apache Cordova framework, CSS, HTML; also able to work with various system API.
2. Data analyzer: Computer knowledge, specifically Excel (for analysis) and able to navigate to various system areas with the ability to filter.

3. Front-end user (data entry): Capability to use smartphones that run Android, specifically version 5 or 6.

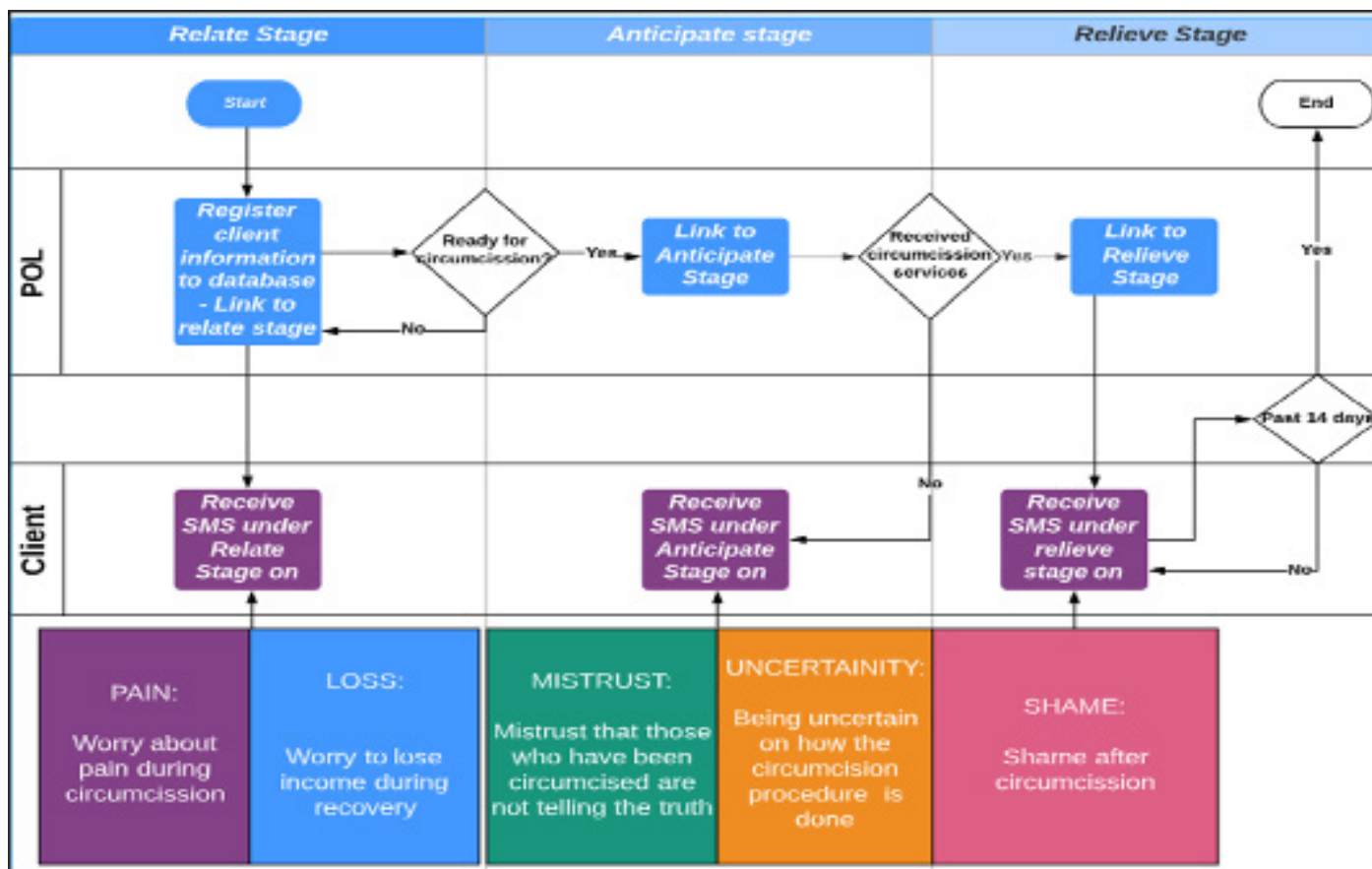
How does it work? Due to the success of the HCD approach in reaching older men in other countries, the project integrated the use of HCD into the Tohara Journey app. Community mobilizers, including community-based health workers and other popular opinion leaders (POLs), were identified and engaged in recruitment and enrollment of prospective clients into the Tohara Journey app.

Tohara Journey transfers data to the web-based server in real-time, and in cases where data are entered while offline synchronization happens once online. The user at the front-end (community volunteer) only has access to the app when they capture prospective VMMC clients' records, such as name, contact detail, and address. Once the prospect client is registered, the web-based system sends SMS to evaluate the client's behavior and understanding of VMMC services and detect the types of barriers hindering them from receiving VMMC services. Once the barriers are detected, the system triggers SMS workflow to respond to the client's needs in accordance with the barrier detected, usually taking the client through the three-staged HCD mental journey until the final stage when the client gets circumcised (see Figure 1).



Community mobilizer leaflets: In collaboration with Desire Lines consultants, a Bill & Melinda Gates Foundation-funded consultant developed a mobilizer leaflet to be used as a guide for community mobilizers. The leaflet was developed based on information gathered from a literature review and interviews with adult men in the supported regions to address key barrier themes. The leaflet was refined through several steps to ensure appropriateness of content and that the

Figure 1: Integrating human-centered design



leaflet provided clear options for men to overcome common barrier themes.

Training of community mobilizers: Community mobilizers were trained on HCD concepts and how to use the leaflet to understand men’s concerns about their decisions and actions to access VMMC services. The mobilizers were also trained on how to use smart phones (Android version 5 or 6) and how to interact with the installed Tohara Journey app. Afterwards, they were supplied with mobile phones and a mobilizer handbook with a range of tailored messages across three HCD stages.

WHAT WORKED

- A total of **2,145** community mobilizers aged 20 years and above were trained on HCD approaches and use of the Tohara Journey app that was downloaded in their mobile device/tablet (Table 1).
- From October 2018 to 2021, a total of **58,826** prospective clients were enrolled into Tohara Journey; of these 42,350 (72%) were moved to the second stage and 40,980 (70%) were circumcised. This represents 3% of all clients that have been circumcised throughout the project’s lifetime.

- Of all clients circumcised, 41% were aged 25 years and above, higher than the project average of 26%.

Table 1: Number of community mobilizers trained in the Tohara Journey App by region

Region	FY2019	FY2020	FY2021	Total
Mwanza	116	147	202	465
Simiyu	118	81	186	385
Mara	82	133	127	342
Shinyanga	127	246	177	550
Total	846	607	692	2145

LESSONS LEARNED

- Use of the well-designed community mobilizers’ leaflet provides simple and clear guidance on applying the complex HCD approach to the low-literate community mobilizers.
- Tohara Journey is easy to learn and use by people with very low literacy levels.
- With wide availability of Android mobile phones, it is easy to procure cheaper mobile phones for use by the community volunteers. It is also possible to use the mobilizers’ self-owned mobile phones to download and install the Tohara Journey app.

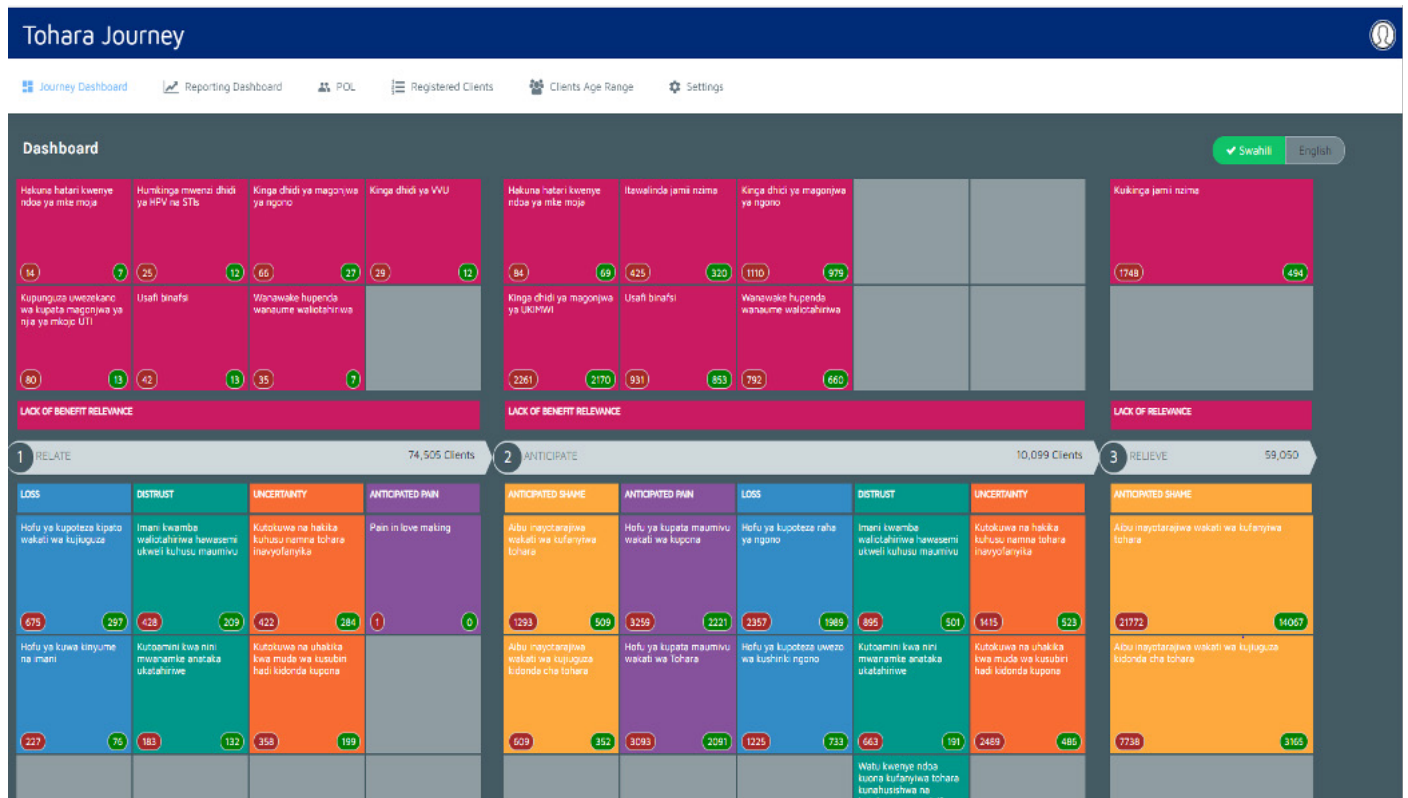
NEXT STEPS AND RECOMMENDATIONS

- Scale-up the use of trained community mobilizers and Tohara Journey to capitalize on the use of widely available Android mobile phones.
- Add more interactive features and functions that enhance privacy by enabling men to register without assistance from a peer community mobilizer
- Further explore ascertaining costs for implementing the use of Tohara Journey and the cost-effectiveness of the approach in relation to the number of HIV infections averted, including procurement costs, airtime, and logistical arrangements such as availability of electricity.
- Update the app to allow additional functionalities such as self-enrollment and further customization of messages to target specific identified client barriers.

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APPENDIX 1: COMMUNITY MOBILIZER'S POSTER



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