

A mobile electronic system to monitor mode, content and duration of health navigation services for people living with HIV in Guatemala

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Background

Health navigation is a strengths-based model originally developed in the context of cancer care and adapted as a way to support people living with HIV to negotiate social and structural barriers to care, especially vulnerable populations such as men who have sex with men (MSM) (1). It is a recommended strategy towards achieving the 90-90-90 goals set by UNAIDS for 2020 (1). Navigators provide instrumental and emotional support for people living with HIV to mitigate barriers to staying in care and adhering to treatment. Timely monitoring of navigation services is challenging due to the burden of reporting a high volume of diverse activities and outcomes.

We describe the design, implementation and outcomes of a mobile monitoring system to support timely documentation and monitoring of health navigation activities for MSM living with HIV in Guatemala. We address the following 3 questions about health navigation:

- 1) What is the most common type of navigator-client interaction (in-person or remote)?
- 2) How much time does the interaction usually last?
- 3) Which activities and topics are most commonly covered in these interactions?

Methods

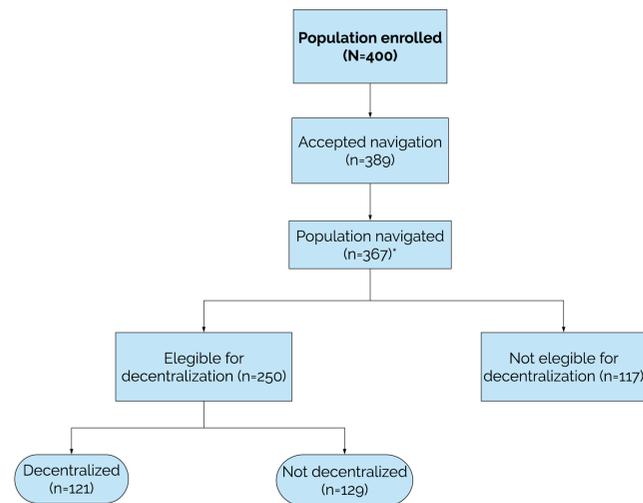
Study Design and Context

This study was part of a multilevel intervention for MSM living with HIV in Guatemala City. The intervention took place from January 2017 to June 2018 at the largest centralized HIV Comprehensive Care Unit (CCU) in Guatemala and three decentralized MSM-friendly clinics, including two run by non-governmental organizations (NGO) and one run by Ministry of Public Health and Social Assistance (MSPAS).

Study Sample

Eligibility criteria included: 1) at least 18 years of age; 2) male; 3) self-reported ever having sex with men; 4) able to speak and understand Spanish; 5) diagnosed with HIV; and 6) enrolled in the centralized HIV CCU at the time of recruitment.

Figure 1. Sample Distribution



*22 participants were lost to follow-up because of death, migration, or because they stopped communicating with their navigators.

Designing a Monitoring System

Due to challenges with initial reporting of patient interactions, such as lack of access to computers during work hours and tedious and time-consuming reporting in spreadsheets, we developed a mobile application which was put into place in July 2017. Data captured in spreadsheets prior to July 2017 was back-entered by each navigator.

We used Open Data Kit (ODK) (2) to create an electronic form in Android app ODK Collect (Figure 2) focused on three areas:

- 1) Mode of navigator-patient interaction: in person or remotely.
- 2) Duration of the interaction.
- 3) Content of the interaction.

Figure 2. Screenshot of the App Collect



Qualitative interviews

We conducted semi-structured interviews with health navigators (n=7) to explore experiences with monitoring system.

Analysis

We used descriptive statistics to describe the study sample and to calculate monitoring system indicators using R version 3.4.0. We conducted rapid thematic analysis of the qualitative data.

Results

Participant Characteristics

The median age of participants was 30 years (IQR: 25-37). Median monthly income was Q2\$2865 or USD\$383. Other characteristics are listed in Table 1.

Table 1. Sociodemographic characteristics

Characteristic	% (n/N)
Age (year)	
18-30	52.6 (193/367)
31-40	28.3 (104/367)
41-50	13.1 (48/367)
>50	6 (22/367)
Ethnicity	
Ladino/Mestizo	88.4 (321/363)
Mayan/xinca	9.4 (34/363)
Other/garifuna	2.2 (8/363)
Education	
No education	1.1 (4/367)
Primary incomplete/complete	8.4 (31/367)
Secondary incomplete/complete	44.7 (164/367)
University and above incomplete/complete	45.8 (168/367)
Department of residence: Guatemala	76.6 (281/367)
Marital status: single/divorced/separated	94.8 (347/366)
Sexual orientation	
Homosexual/Gay	74.9 (275/367)
Bisexual	23.4 (86/367)
Heterosexual	1.6 (6/367)

Monitoring System Results

- Total reports entered in system = 4,463
- Successful interactions (engaged within 24h of initiating contact) = 91.7%
- Median number of interactions per patient = 9 (IQR: 7-14)
- 3,201 (71.7%) interactions occurred remotely, 88.2% of which were successful
- 92.3% of remote interactions occurred via mobile applications, mainly WhatsApp
- Median duration (phone call) = 6 min (IQR: 5 – 10)
- Median duration (in person) = 3 h (IQR: 1 – 5)
- Time to enter data into mobile app = 1 to 5 min

Figure 3. Types of support provided in person

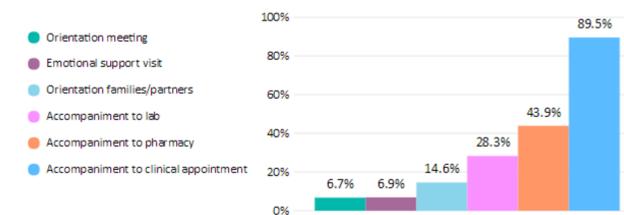


Figure 4. Mode of support provided remotely

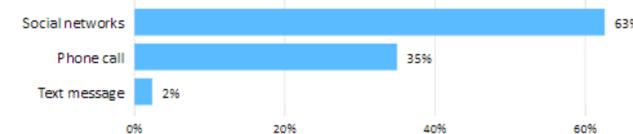


Figure 5. Social networks used for remote support

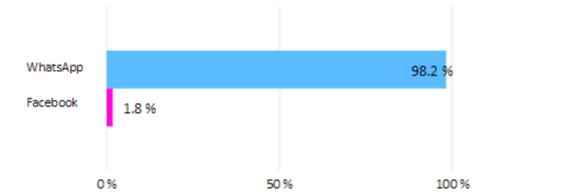
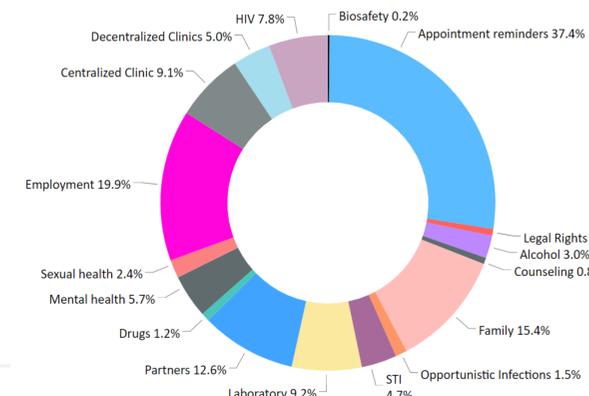


Figure 6. Topics discussed during navigator-patient interactions



Use of Monitoring System Results for Program Improvement

Data obtained from the system were used to improve programming in the following ways:

- 1) Based on the high volume of remote interactions, a “cyber day” was established when navigators could work remotely and make interventions via text messages, social networks and phone calls.
- 2) We identified topics and organized additional training, such as opportunistic infections, STIs and the HIV legal framework in Guatemala, which benefited navigators and users in real time.
- 3) Provide constructive feedback to navigators on their work performance, such as the need to accompany certain participants to clinic appointments more frequently.

Acceptability of Monitoring System by Navigators

In general, health navigators found the monitoring system easy-to-use and a benefit to them and the project. However, when and how navigators entered data into the monitoring system varied. Roughly half reported entering data on a daily basis after each interaction with a patient. Others, however, reported entering data on a weekly basis by reviewing call and message logs on their phones as well written notes. Additionally, some navigators chose not to document certain interactions they deemed unimportant, such as weekly greetings and check-ins, identifying an opportunity to strengthen comprehensive use of the monitoring system.

Conclusions

- The majority of navigator-patient interactions occurred remotely through instant messaging application WhatsApp, lasted 6 minutes, covered both HIV and non-HIV related topics, and were most commonly related to appointment reminders.
- Navigators provided real-time remote support in a broad range of topics, well beyond HIV. Appointment reminders, employment, and interpersonal relationships were the three main topics discussed during navigator-patient interactions.
- The mobile monitoring app is user-friendly and allowed navigators to efficiently record details about each interaction with participants.
- Access to up-to-date navigator data allowed the intervention team to more effectively monitor and provide timely feedback and continuous training.
- These data facilitate analysis of the required intensity and content of support for different types of patients to tailor and streamline navigator interventions.

References

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