

# Developing an Innovative HIV Self-testing Service with Counseling Provided by a Fully-automated Chatbot (HIVST-Chatbot)

S.Y. CHEN<sup>1</sup>, Q.P. ZHANG<sup>2</sup>, Jason CHAN<sup>3</sup>, F.Y. YU<sup>1</sup>, Andrew CHIDGEY<sup>3</sup>, Y. FANG<sup>4</sup>, Phoenix K.H. MO<sup>1</sup>, Z.X. WANG<sup>1</sup>

1. Jockey Club School of Public Health and Primary Care, The Chinese University of Hong Kong, Hong Kong, China
2. School of Data Science, City University of Hong Kong, Hong Kong, China;
3. AIDS Concern, Hong Kong, China
4. Department of Health and Physical Education, The Education University of Hong Kong, Hong Kong, China

## Objective

Counseling with HIV self-testing (HIVST) could facilitate linkage to care and behavioral changes among men who have sex with men (MSM) (1, 2). As demonstrated by previous randomized controlled trial (RCT), HIVST with real-time instruction, pre-test and post-test counseling provided by trained administrators (HIVST-OIC) was highly effective in increasing HIV testing uptake (3). However, it was labor-demanding and difficult to implement on a large scale. A fully-automated Chatbot is potentially useful to provide real-time counseling supporting HIVST users.

## This study was to:

- develop an innovative HIV self-testing (HIVST) service with online real-time instruction and counseling provided by a fully-automated Chatbot (HIVST-Chatbot)
- test whether HIVST-Chatbot would produce effects that are similar to HIVST-OIC in increasing HIVST uptake and the proportion of HIVST users receiving counseling among MSM within a six-month follow-up period.

## Methods-Part 1

### Part 1: Development of a fully-automated artificial intelligence Chatbot

- We have developed the Chatbot on the WhatsApp platform for their wide popularity and user-friendly interface for extensions
- The Chatbot can be integrated with the platform through its public Web API services
- Participants' responses will be sent to the platform's instant messaging (IM) server and to a separately constructed conversational agent server
- The Chatbot processes a message and sends it back to the IM server. Finally, users can view the message in less than a second without sluggish feeling

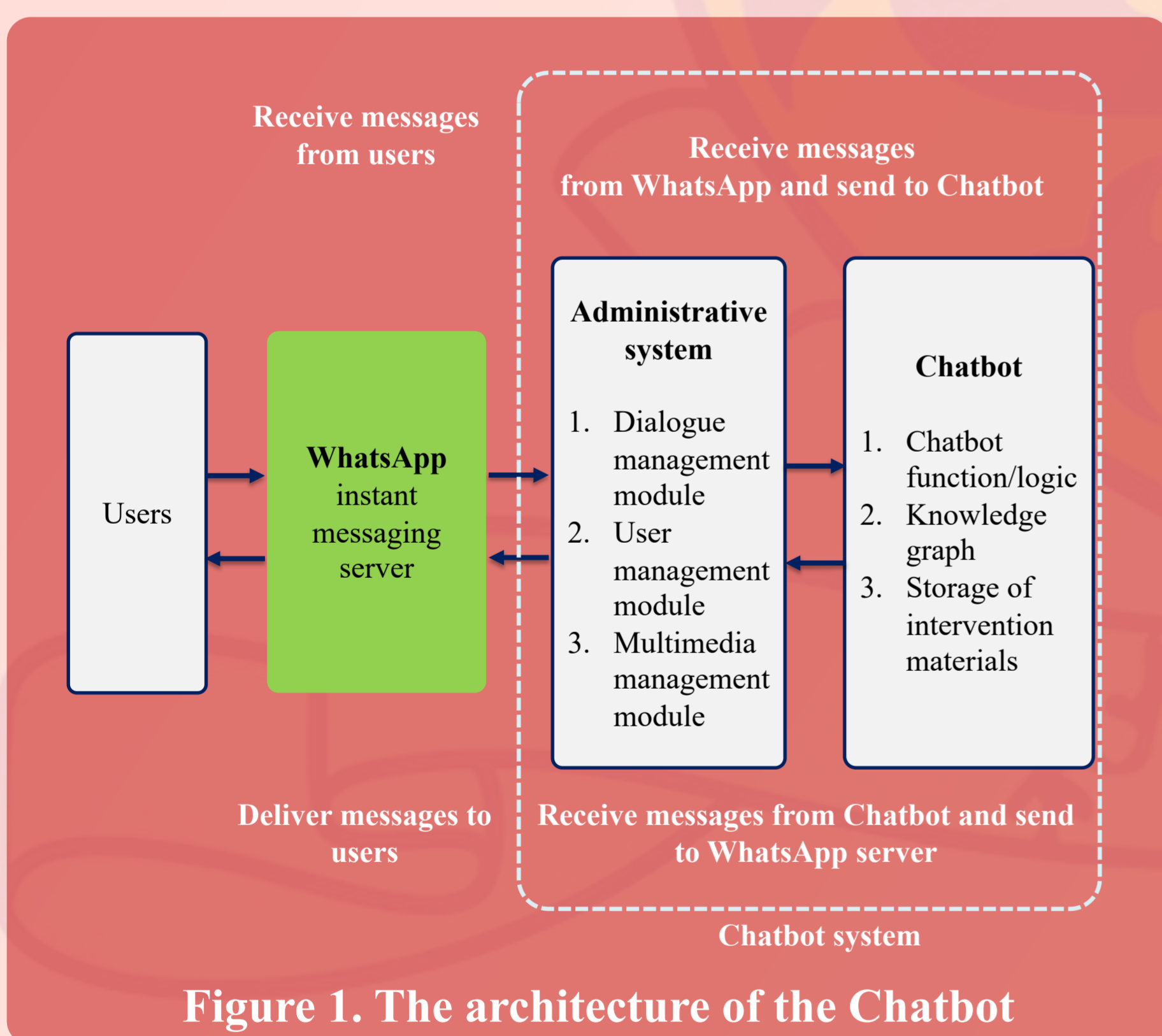


Figure 1. The architecture of the Chatbot

## Methods-Part 2

### Part 2: A non-inferiority randomized controlled trial evaluating the HIVST-Chatbot

The inclusion criteria of participants are 1) Hong Kong Chinese-speaking men aged at least 18 years old, 2) anal intercourse with at least one man in the past six months, 3) willing to leave contact information and be followed up at Month 6, 4) access to online live-chat application (WhatsApp), and 5) no intention to leave Hong Kong for one month consecutively within the next six months. Those who are diagnosed as HIV positive will be excluded.

## Preliminary results

The study is ongoing. Recruitment and enrollment of participants began in April 2023. Preliminary results showed that MSM perceived HIVST-Chatbot as user-friendly and convenient. The acceptance of HIVST-Chatbot and the HIVST-OIC was equally high.

## Ethics approval

Ethics approval was obtained from the Survey and Behavioral Research Ethics Committee of the Chinese University of Hong Kong (Ref#: SBRE-22-0488).

## Funding

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## Contact

Siyu Chen, Ph.D. Candidate

Centre for Health and Behaviors Research, Jockey Club School of Public Health and Primary Care, The Chinese University of Hong Kong, Hong Kong, China  
chensiyu@link.cuhk.edu.hk

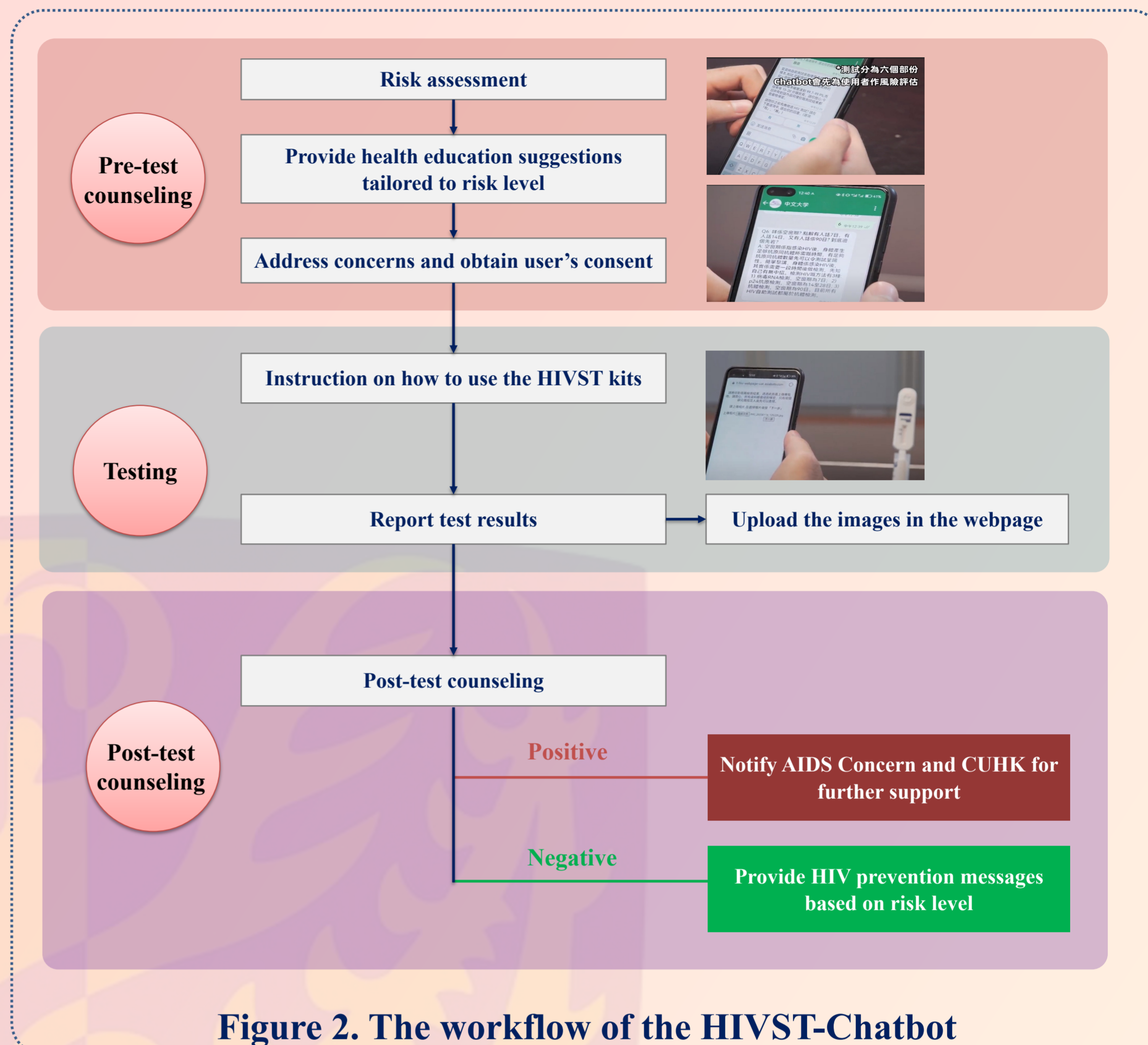


Figure 2. The workflow of the HIVST-Chatbot

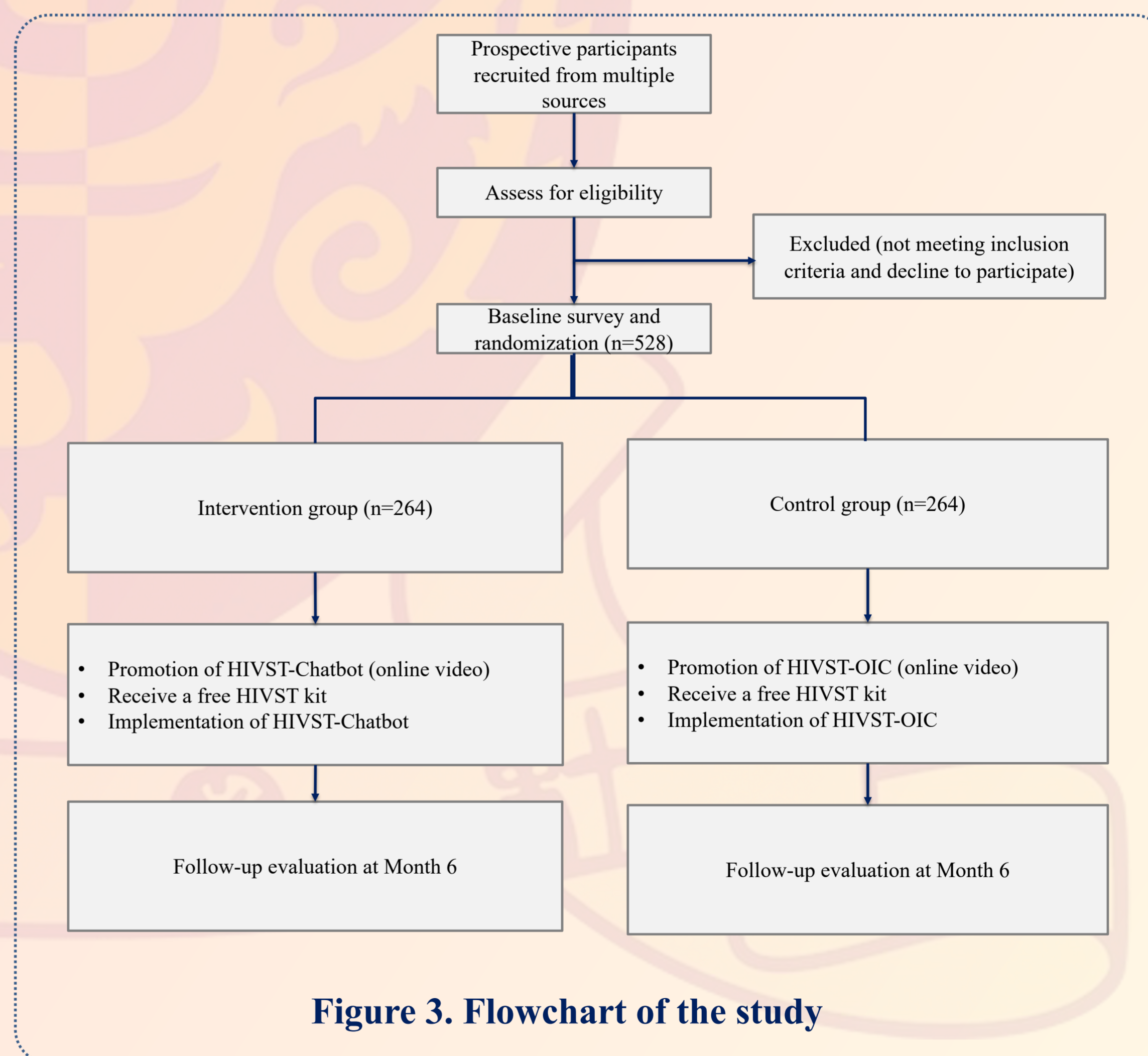


Figure 3. Flowchart of the study

## References

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3. Wang Z, Lau JTF, Ip M, Ho SPY, Mo PKH, Latkin C, et al. A Randomized Controlled Trial Evaluating Efficacy of Promoting a Home-Based HIV Self-Testing with Online Counseling on Increasing HIV Testing Among Men Who Have Sex with Men. AIDS and behavior. 2018;22(1):190-201.