

# HIV SELF-TEST KITS

## Evidence-Based Structural Intervention

### INTERVENTION DESCRIPTION

#### Goal of Intervention

- Increase HIV testing
- Increase HIV testing of sex partners

#### Intended Population

- HIV-negative men who have sex with men (MSM)

#### Brief Description

The *HIV Self-Test (HIVST) Kits* intervention is designed to increase HIV testing among men who have sex with men (MSM). The intervention consists of the distribution of two free finger-prick based HIVST kits at intervention enrollment along with detailed electronic users' instructions and counseling information, including 24/7 hotlines and an official WeChat (Chinese social media app) study account to reach research assistants to obtain consultation on the HIVST administration and interpretation of testing results. Participants send an electronic photocopy of their test result via secured individual WeChat contact with a research assistant (RA) after they use each HIVST kit, and then are replenished with new free kits. Participants are eligible to receive two to four kits every three months, with a maximum of 12 kits for one year in addition to site-based HIV testing (SBHT). Additionally, participants are encouraged to distribute HIVST kits to sex partners. Test kits are sent to the participant-provided addresses via express mail or participants pick up kits at study clinics. Participants can also purchase HIVST kits online if they need more than four kits every three months. Participants and their sex partners with positive HIVST results are advised to contact the trained RA who provides posttest counseling and referral for a confirmatory test.

#### Theoretical Basis

- None reported

#### Intervention Duration

- 12 months

#### Intervention Settings

- Address where tests are received
- SBHT services at local hospitals, Chinese Center for Disease Control and Prevention clinics and community-based organizations

#### Deliverer

- Research assistant via social media app: WeChat

#### Delivery Methods

- Digital health via social media app: WeChat and 24/7 hotlines
- Distribution of HIV self-test kits to address provided by the participants

## Structural Components

- Access
  - Increased access to HIV testing
  - Provided participants with HIV self-test kits and encouraged distribution to sexual partners
- Physical Structure
  - Services were provided in a non-traditional setting (i.e., digital health)

## INTERVENTION PACKAGE INFORMATION

**The intervention package is not available at this time. Please contact Xianhong Li for information on training materials.**

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## EVALUATION STUDY AND RESULTS

### Study Location Information

The original study was conducted in four cities in Hunan Province, China between April 2018 and June 2018.

### Key Intervention Effects

- Increased HIV testing frequency

### Recruitment Settings

- Community outreach, social media, and hotlines

### Eligibility Criteria

Participants were eligible if they were: 1) born as male; 2) aged 18 years or above; 3) self-reported condomless anal or oral sex with men in the past 3 months; 4) HIV negative; and 5) possessed a smartphone and reported familiarity in using the social media app WeChat. Participants were excluded if they scored above 35 on the Brief Psychiatric Rating Scale, which indicates having a psychiatric disorder, or if they could not read or speak Chinese.

### Study Sample

The baseline study sample of 216 men is characterized by the following:

#### Self-Test HIV Testing (HIVST) Intervention (n = 110)

- 95% Han persons, 5% persons identifying as another Chinese ethnicity
- 100% male persons
- 74% men who have sex with men (MSM), 24% bisexual persons, 2% heterosexual persons
- Mean age of 29 years

#### Site Based HIV Testing (SBHT) Control (n = 106)

- 92% Han persons, 8% persons identifying as another Chinese ethnicity
- 100% male persons
- 74% MSM, 24% bisexual persons, 2% heterosexual persons
- Mean age of 28 years

*Percentages may not add up to 100% due to rounding.*

## Assignment Method

Participants were randomly assigned to one of two study arms: Self-Test HIV test (HIVST) intervention arm ( $n = 110$ ) or the Site-Based HIV Test (SBHT) control arm ( $n = 106$ ). To balance the history of HIV testing, the authors stratified eligible participants into two subgroups at enrollment: 1) recent testers (i.e., HIV test within past two years) and 2) non-recent testers (i.e., no HIV test in the past two years or never tested). Two separate randomized number tables for the two groups were generated with statistical software and used to randomly divide participants separately for each subgroup into the two arms.

## Comparison

Comparison participants were referred to local hospitals, free HIV testing and counseling clinics, and community-based organizations to receive SBHT services, with off-site options. They could also buy HIVST kits online or from local pharmacies.

## Relevant Outcomes Measured

- HIV testing behavior (including HIV testing frequency) was measured from baseline to 12-month follow-up.

## Participant Retention

- 88% of intervention participants retained at 12 months.
- 82% of control participants retained at 12 months.

Participant retention is not a criterion for the Structural Intervention (SI) chapter.

## Significant Findings on Relevant Outcomes

Over the 12 months of follow up:

- Intervention participants reported a significantly greater average frequency of HIV tests (mean = 3.75, Standard Deviation [SD] = 1.77) than the control participants (mean = 1.80, SD = 1.28); standardized mean difference ([SMD]: 1.26 (95% CI: 0.97 – 1.55,  $p < 0.001$ )).
- A significantly greater percentage of intervention participants than control participants tested at least once (94.5 % vs. 86.6 %, adjusted odds ratio [AOR] = 4.32, 95% Confidence Intervals [CI]: 1.38 – 13.56,  $p = 0.012$ ).\*
- A significantly greater percentage of intervention participants than control participants tested at least twice (84.5% vs. 56.6%, AOR = 5.09, 95% CI: 2.56 – 10.11,  $p < 0.001$ ).\*
- The likelihood of HIV testing among intervention participants was 2.1 times that of control participants (adjusted rate ratio [ARR] = 2.10, 95% CI 1.75 – 2.53,  $p < 0.001$ )\*
- Sex partners of intervention participants had a higher percentage of receiving at least one test than sexual partners of control participants (79% vs 55%; AOR = 4.02, 95% CI: 2.05 – 7.86;  $p < 0.001$ ).\*
- Sex partners of intervention participants had a higher proportion of receiving at least two tests than sex partners of control participants (59% vs 40%;  $p < 0.001$ ), and the odds in the intervention arm were more than double those in the control arm (AOR = 2.85, 95% CI: 1.57 – 5.18).\*
- The average frequency of HIV tests among sex partners of each participant was higher in the intervention arm than the control arm (mean 2.65 vs. 1.31; SMD = 0.64, 95% CI: 0.36 – 0.92,  $p < 0.001$ ).
- The average frequency of HIVST among sex partners of participants was higher in the intervention arm vs. the control arm (1.41 vs. 0.36, SMD = 0.75, 95% CI: 0.47 – 1.04,  $p < 0.001$ ).
- Sex partners of intervention participants were 1.55 times as likely to accept HIV testing compared with the sex partners of control participants (ARR = 1.55, 95% CI: 1.23 – 1.95,  $p < 0.001$ ).\*

\*Adjusted for subgroup, age, ethnicity, residence, duration of living in a study city, cohabitation, education, sexual orientation, marital status, occupation, and monthly income.

## Considerations

### *Additional significant positive findings on non-relevant outcomes*

- None reported

### *Non-significant findings on relevant outcomes*

- The average frequency of SBHT among sexual partners of each participant was higher in the intervention arm vs. the control arm, but not statistically significant (1.24 vs. 0.96, SMD = 0.23, 95% CI: -0.05 – 0.50,  $p = 0.055$ ).

### *Negative findings*

- None reported

### *Other findings*

- Participants in the intervention arm reported a higher frequency of HIV testing during the follow up than those in the control arm; nearly 60% of intervention participants reported four or more tests in comparison to less than 10% of control participants.
- There was no statistically significant difference in the mean number of sexual partners reported by participants between the intervention and control arms (7.25 vs. 6.98,  $p = 0.91$ ).
- In total, the intervention arm reported 291 partner HIV tests and the control arm reported 138.
- During the study period, three participants in the intervention arm and none in the control arm tested HIV positive.
- Eight sex partners of intervention arm participants tested HIV positive.
- All participants who tested HIV positive were referred for laboratory HIV confirmation tests, linked to HIV care and received ART.

### *Implementation research-related findings*

- None reported

### *Process/study execution findings*

- None reported

### *Adverse events*

- None reported

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## REFERENCES AND CONTACT INFORMATION

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