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To Increase HIV Testing Among Men Who Have Sex With Men in Malaysia

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Sin How Lim, Herlianna Naning, Mohd Akbar, Rumana Saifi, Alison Jackson, Sajaratulnisah Othman, Joselyn Pang, Sutayut Osornprasop, and Adeeba Kamarulzaman

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Table of Contents

Acknowledgements 2
List of Figures and Tables 4
Abbreviations 5
Executive Summary 6

1. Introduction 8
Rationale & Innovation 9
Objective 9
Specific Aims 9
2. Methodology 10
Phase One 11
Phase Two 13
Phase Three Formative Research 16
3. Challenges & Limitations 17
4. Results 19
Barriers of and Facilitators to HIV Testing in a Large Online Survey 19
Motivational Interviewing (MI) 22
MI and HIV Testing 22
General Concerns Prior to MI and HIV Testing 24
Specific Concerns Prior to HIV Testing 25
Satisfaction Levels of MI 27
5. Discussion and Recommendations 28

References 31
Appendix 32

List of Figures

Figure 1 Flow chart of overall research activities 10
Figure 2 The pop-up banner advertisement on Grindr 11
Figure 3 MSM Study Advertisement Cards 12
Figure 4 Study process of Online Baseline Survey, Motivational Interviewing and HIV Testing 14
Figure 5 Process of pre-test and post-test counselling after MI 15
Figure 6 Proportion of respondents who have ever tested for HIV and those who have not 19
Figure 7 Problems encountered when tested for HIV in the past among respondents who have undergone HIV testing 20
Figure 8 Reasons for not going for testing among respondents who never tested for HIV 20
Figure 9 Last HIV testing date 21
Figure 10 Previous HIV testing sites among those who have tested for HIV 21
Figure 11 The HIV testing site in the present study 23
Figure 12 Number of participants completed 1) motivational interviewing, 2) HIV testing, 3) linked to care, 4) started HAART (Highly Active Antiretroviral Treatment) 24
Figure 13 Participants' experience with MI 27

List of Tables

Table 1 Composition of focus group discussion of MSM and case workers 16
Table 2 Residence of participants by state 22
Table 3 General concerns before and after MI 25
Table 4 Specific concerns about getting a HIV test 26

Abbreviations

ARV	Antiretroviral therapy
CBO	Community-based Organisation
CMS	Case Management Specialist (a term used by case workers for their job title)
FGD	Focus Group Discussion
GF	Global Fund to Fight AIDS, Tuberculosis and Malaria
KL	Kuala Lumpur
KLASS	Kuala Lumpur AIDS Support Services Society
MSM	Men who have sex with men
MI	Motivational Interviewing
CBO	Community-based Organisation

Executive Summary

In 2014, the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) was awarded to Malaysia. With funding support from GFATM, KLASS, a civil society organization, has been implementing an innovative approach of case management to increase uptake of HIV testing and treatment in MSM. In 2016, this program was expanded to other key populations (people who inject drugs, sex workers and transgender) in 15 sites of eight states of Malaysia. In case management program for MSM, case workers conduct field outreach using online channels, engage and accompany clients for HIV testing at the government health clinics, and if the clients tested positive, follow them through the treatment cascade to ensure that their viral loads are suppressed.

From March 2017-April 2018, we conducted a study to pilot test a brief intervention using motivational interviewing principles to increase HIV testing among MSM. The overarching research objective was to assess the feasibility of this brief intervention and train the case workers in adopting a more client-centered approach, tailored to the needs of the clients during their counselling sessions.

Between 25 July 2017 to 26 February 2018, an online survey was used to recruit MSM who have never tested or have not done so in the past 12 months. Of the 622 MSM who completed the online survey, 205 (33%) have never tested for HIV in their lifetime and 141 (22.7%) have tested more than 12 months. Of the 622 men, 315 were interested in the follow up study (motivational interviewing) and left their contacts for follow up. Motivational interviewing, a client-centered counseling for "eliciting behavioural change by helping clients to explore and resolve ambivalence", was conducted for a period of 5 months from 6 September 2017 to 11 February 2018. A total of 112 participants received this counseling, 87 (77.7%) agreed and underwent HIV test. Of these men, 19 (21.8%) were tested positive for HIV (see Figure 8 for details). All newly diagnosed MSM were linked to health clinics and/or hospital and 13 initiated antiretroviral treatment.

Additionally, we conducted pre- and post-survey to assess the motivation and concern of HIV testing before and after the intervention. Focus group discussion and in-depth interviews were conducted to collect qualitative data on the barriers and facilitators to HIV testing, and feedback on the brief intervention. All specific concerns on HIV testing were significantly less at post-intervention phase. At the post-MI survey, majority of the participants (90%) agreed that they were satisfied with the MI intervention while 27% felt that they were being lectured and 9% felt pressured during the conversation. Furthermore, case workers from KLASS reported high level of satisfaction in delivering MI as it helps build trust and rapport with their clients.

Because the study did not use a randomized control trial design, it is not designed to evaluate the impact of the intervention using gold standard method. The main objective of the study was to assess the feasibility of implementing motivational interviewing in the community settings. We conducted the online survey to reach a subgroup of MSM who have never tested for HIV but the response rate of the online survey was low and only a small proportion of respondents left their contacts to follow up. Despite the limitations imposed by convenience sampling, several findings can be drawn from the study:

- The rate of HIV testing, ever or recent, among MSM is low and as a result, many MSM do not know their current HIV status

- Most of the participants who tested positive in the study were young MSM aged 18-25 years
- Fear of HIV testing, fear of disclosure of sexual behaviors, and fear of HIV diagnoses were primary reasons why MSM do not investigate their HIV status
- Lack of knowledge of the availability of HIV treatment and low level of treatment literacy
- Participants preferred the peer-approach and the client-centered counseling style compared to traditional, top-down approach of counseling
- The pre-and post-MI surveys showed that brief intervention reduced the specific concerns[1] about getting HIV test
- The case management program needs to be scaled up and continual training and capacity building of the CBOs are needed to ensure continuity of services.

The study findings highlight the need to improve access to HIV prevention and treatment services for MSM. Interventions need to target high-risk MSM and strengthen non-discriminatory practice in healthcare setting. In order to achieve 90-90-90 target of ending AIDS epidemic by 2030, multiple barriers to accessing HIV testing needs to be addressed. These barriers include stigma and discrimination as many MSM did not want to leave their contacts to follow up or came forward to talk to the case workers due to fear of exposure of identity. In the survey, participants who had ever tested for HIV identified fear of meeting someone they knew at the testing site as a barrier to HIV testing. For participants who had never tested for HIV, fear of HIV-positive results prevented them from getting a HIV test. Because of pervasive HIV and homosexuality stigma, manifested at individual, community, and societal levels, many MSM fear of accessing healthcare services, including HIV prevention methods (buying condoms), learning their HIV status, enrolling in care, and adhering to treatment.

Participants from this study were concerned about breach of confidentiality of positive results by healthcare providers and disclosure of homosexual activities to the healthcare providers. Training to eliminate discriminatory attitudes towards MSM and people living with HIV and maintaining confidentiality of HIV status of clients are necessary to build trust and increase uptake of testing services, especially at the government clinics.

There is a need to implement "task shifting" of HIV testing and counseling to improve access to testing and reducing loss to follow up. Participants in this study indicated that peer support was the strength of the intervention. Counseling by nurses and psychologists is expensive and not feasible in a resource-limited setting such as Malaysia. Therefore, professional training to case workers to conduct motivational interviewing could be a more practical and effective approach. Continual, regular training on MI will be necessary to maintain the quality of MI. Furthermore, to integrate and address the gap of services provided by CBO and government clinic, peer-based HIV testing where trained case workers conduct counseling and rapid HIV testing at CBO should be considered. In order to overcome stigma associated with HIV testing sites (i.e., CBO and government clinics), alternative testing models such as online testing, home-based self-testing may be suitable for MSM who prefer easy and convenient access to HIV testing.

Finally, the government needs to consider investing in innovative approaches such as the online outreach and case management, which demonstrates high uptake of testing among high risk MSMs. This investment includes revision of incentivizing schemes for case workers and comprehensive training to sustain and retain case workers at the NGOs.

1 "Planned to get an HIV test within the next 3 months", "Worried about getting HIV/AIDS", "Worried about getting a HIV test"

CHAPTER 1
Introduction

Men who have sex with men (MSM) in Asia, especially those from China and Thailand are part of a burgeoning global HIV epidemic.[1] In Malaysia, the HIV epidemic is transitioning from injection drug use to sexual transmission. Since 2010, sexual activity has surpassed injection drug use as the most commonly reported route of infection in new HIV cases.[1] The rise of sexual transmission of HIV is in part explained by MSM, a population which has been difficult to study because homosexual behaviors are culturally and legally prohibited in Malaysia.[3,4] Consensual anal sex between two men is criminalized by penal code 377 and Sharia law, however such laws are rarely enforced. The Integrated Bio-Behavioral Surveillance Studies conducted by the Ministry of Health of Malaysia show that the HIV prevalence among MSM has increased from 7.1% to 8.8% from 2012 to 2014.[1] Geographically, the HIV prevalence among MSM was highest in Kuala Lumpur at 22%. Both studies of MSM in Kuala Lumpur[2] and Penang[3] showed consistent findings of low levels of HIV knowledge and high levels of unprotected anal sex, group sex, multiple partnerships, and recreational drug use before sex, suggesting MSM are at high risk for HIV infection. To date, MSM-specific barriers of HIV testing and treatment remains undocumented in Malaysia. The uptake of HIV testing among Malaysian MSM is dismally low. Therefore, many MSM who are infected may not be aware of their infection. Anecdotally, late diagnosis was common among MSM patients and they were reluctant to disclose their HIV status to their family members.

To compound the issue of low HIV awareness and high-risk sexual behaviors within MSM communities, stigma and discrimination against people living with HIV/AIDS (PLWHA) and MSM are prevalent within the healthcare system. An operational study conducted by our research team found similar issues within the healthcare system, as healthcare providers, community based organizations (CBO), and MSM citing instances of poor patient confidentiality, perceived and enacted stigma and discrimination by doctors and nurses.[4] Currently, the majority of MSM in Malaysia are using social media and social networking applications to socialize and seek partners and such platforms will be ideal to reach a large number of MSM.[5-7] Social media engagement may be effective in reaching hidden subpopulation of MSM, such as ethnic minority MSM who use recreational drugs which increases the risk for HIV transmission.[8]

In this study, the case workers conducted a brief intervention using motivational Interviewing (MI) principles to assess and motivate participants for behavioural change. MI is a directive, client-centered counseling method developed from the experience of alcoholism treatment by Miller.[9] Listed as one of the best interventions by the US Centers of Disease Control and Prevention, (http://www.cdc.gov/hiv/topics/research/prs/best-evidence-intervention.htm), MI has been proven to elicit behavioral change by helping clients to explore and resolve ambivalence.[10] It has also been shown to motivate patients for behavioural change across medical settings[11] and among people living with HIV.[12] A randomized clinical trial has shown that MI increases HIV testing among young African American MSM.[13]

Rationale & Innovation

Because of social stigma associated with homosexuality and HIV, current HIV services provided by the government health clinics are under-utilized by MSM. In the highly stigmatized environment, peer support and peer navigator models are particularly effective in facilitating engagement and retention of hard-to-reach communities.[14] Based on the principle of diffusion of innovations,[15] peer-based, case workers may serve as the community popular opinion leader (C-POL) and facilitate linkage between outreach and government health services by working closely with partner health clinics. Since April 2014, the Malaysian AIDS Council (MAC), funded by the GF, initiated a pilot project that uses case management model to increase HIV testing and treatment among MSM. In this model, case workers approach MSM via gay social media and promote HIV/STI prevention and testing. They will then accompany clients for HIV testing at the government health clinics, provide pre-test counselling and support MSM for confirmatory test and follow up. The proposed study will build on the strength and experiences of MAC in implementing the pilot project. The study will incorporate motivational interviewing, an evidence-based intervention recommended by the United States Centers for Disease Control and Prevention to increase HIV testing and linkage to care among MSM who have never tested for HIV.

Objective

The overall objective of this study is to increase demand for HIV testing among MSM by improving peer and professional support for service provision. Specifically, we propose to conduct online outreach and an evidence-based intervention, motivational interviewing, to encourage MSM undertake HIV testing.

Specific Aims

Specific Aim 1 (Phase 1): To examine the barriers of and facilitators to HIV testing in a large online survey and test the feasibility of reaching MSM who have never tested for HIV and who tested more than 12 months ago.

Specific Aim 2 (Phase 2): To conduct a motivational interviewing among MSM who have never tested for HIV and those who tested more than 12 months ago.

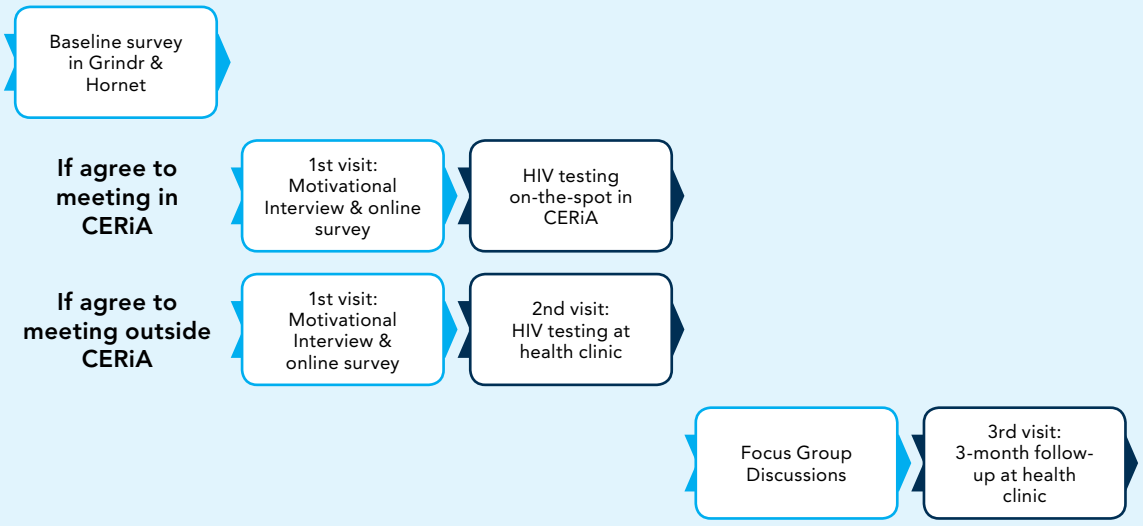
Specific Aim 3 (Phase 3): To evaluate motivational interviewing using pre-post design and explore the experiences of MSM in the brief intervention.

CHAPTER 2
Methodology

A Community Advisor Board (CAB) made up of MSM community members and leaders of MSM-serving community-based organizations (n=8) was formed to provide feedback on all components of the proposed study. The Community Advisory Board is made up of MSM community members and leaders of MSM-serving community-based organizations who provided feedback on all components of the proposed study. We invited ten MSM community members and leaders but only five were available for the meeting. In general, the board members agreed with the proposed study. Two concerns were highlighted: 1) Clients may request HIV testing at other government health clinic (not within the selected clinics for this study) and 2) The pre- and post-test counseling conducted by the medical staff from the government health clinics staff may not conform to the standard guidelines. The Board also proposed to stratify focus group discussion based on language and age to ensure homogeneity of the participants within a focus group and full participation and discussion in the group.

Overall, for Phase One we recruited MSM who never tested for HIV or in the period of 12 months through large online behavioral survey of MSM and active online outreach by case workers. Previous online surveys showed that 33-75% of MSM in Malaysia have never tested for HIV.[3,16] In our online survey, a total of 622 MSM completed the survey; of whom, 38.4% (n=239) had never tested for HIV (n=239) and 22.7% tested more than 12 months ago (n=141) (see Figure 8). Among respondents who completed the survey (n=622), 50.6% (n=315) left their contact information so that they can be followed up by the case workers. After several attempts in arranging the face-to-face interview, 112 participants met with the case workers and received motivational interviewing. After motivational interviewing, 86 agreed and underwent HIV testing at the study site or the government health clinic. Those who showed positive results were linked to care immediately. Pre- and post-MI surveys were administered to collect data on knowledge of and attitudes towards HIV testing, risk behaviors, and willingness to get tested at the first meeting with case workers. In the final phase, formative research was conducted to identify barriers and facilitators to HIV testing among MSM.

FIGURE 1. Flow chart of overall research activities



Phase One

Our first specific aim is to examine the barriers and facilitators to HIV testing in a large online survey and test the feasibility of reaching MSM who never tested for HIV or for the period of 12 months. With reference to the successful social media campaign, Adam's Love in Bangkok[16], we collaborated with Grinder and Hornet to enrol participants into the study to undergo anonymous HIV testing either in CERiA or in four government primary health clinics which provide MSM-friendly HIV testing and treatment. These clinics are Klinik Kesihatan Cheras, Klinik Kesihatan Sentul, Klinik Kesihatan Kelana Jaya and Klinik Kesihatan Seksyen 7 Shah Alam.

The participants were recruited through Grindr which is the most common social networking applications for MSM populations in Malaysia. The pop-up banner was made available in Grindr website for a duration of two weeks from 16 to 31 August 2017. Additionally, complimentary advertisement was sent by Hornet to their registered members' personal inbox. The pop-up banner on Grindr is displayed in Figure 2. Recruitment was also conducted through online outreach on social media such as Facebook, WhatsApp and WeChat apps by case workers.

FIGURE 2. The pop-up banner advertisement on Grindr

We also engaged the MSM community leaders in Klang Valley such as the Pink Triangle Foundation to promote the study among their close contacts and existing networks. To increase participations of this study, we had also identified individuals who may have close contact with MSM groups in outside Klang Valley where there were no prevention programs targeting MSM. We have also printed a total of 600 cards and distributed at 2 sauna, 1 nightclub, and 1 massage parlour in Greater Kuala Lumpur (see Figure 3 for design of MSM Study Advertisement Card).

FIGURE 3. MSM Study Advertisement Cards

Participants' consent were obtained via an online process. By clicking the link to the study (as indicated in Figure 2), participants were directed to an online consent process which explained study details, including objectives, risks and benefits of the study. These online consent procedures had follow the suggested best practices on Internet-based survey methodology by Pequegnat and colleagues.[17] Our criteria for this phase were participants who are male sex at birth, 18 years and older, have had anal intercourse with a male in the past 12 months, self-reported HIV negative/unknown or positive status, Malaysian citizenship, do not plan to relocate in the next 9 months, were recruited in this study. All participants were asked to complete a baseline online survey which has approximately 150 questions and administered through an online survey tool (RedCap, Research Electronic Data Capture at https://catalyst.harvard.edu/services/redcap/). The survey tool enables the use of skip patterns, piping of questions, and individualized experience with the online survey based on responses. The survey took approximately 30 minutes and designed in Malay and English language. Specific algorithm was developed to prevent users from taking the survey more than once. Participants were asked questions on demographics, health history, sexual and drug use history, and other HIV-risk behaviors. At the end of the questionnaire, participants were asked if they would be interested and willing to participate in a study that will involve interaction with a case worker to promote HIV testing. Those who were willing to participate were asked to leave their nicknames, phone numbers, and email addresses for follow up. Most of the measures were informed by modified socioecological framework.[18] The items measured are described below.

Demographics. Gender (screener), age (screener), income, education, employment status, housing situation including stability and type of housing, and household composition, marital and relationship status, migrant status, years lived in Kuala Lumpur.

Sexual Behaviors. Measures were adapted from Bangkok MSM Cohort Study.[19] The instrument first screens respondents for how many different sexual partners they had in the last 6 months. They then complete a matrix describing the characteristics of the most recent 5 sexual partners in the past 6 months.

Syndemic Factors. A broad range of psychosocial health conditions[19] were accessed with widely-used and validated standardized scales: CES-D, suicidality, sex work lifetime (yes/no) and recent (in the past 30 days), use and frequency of substances including methamphetamines, amphetamines, ecstasy, GHB, and Viagra.

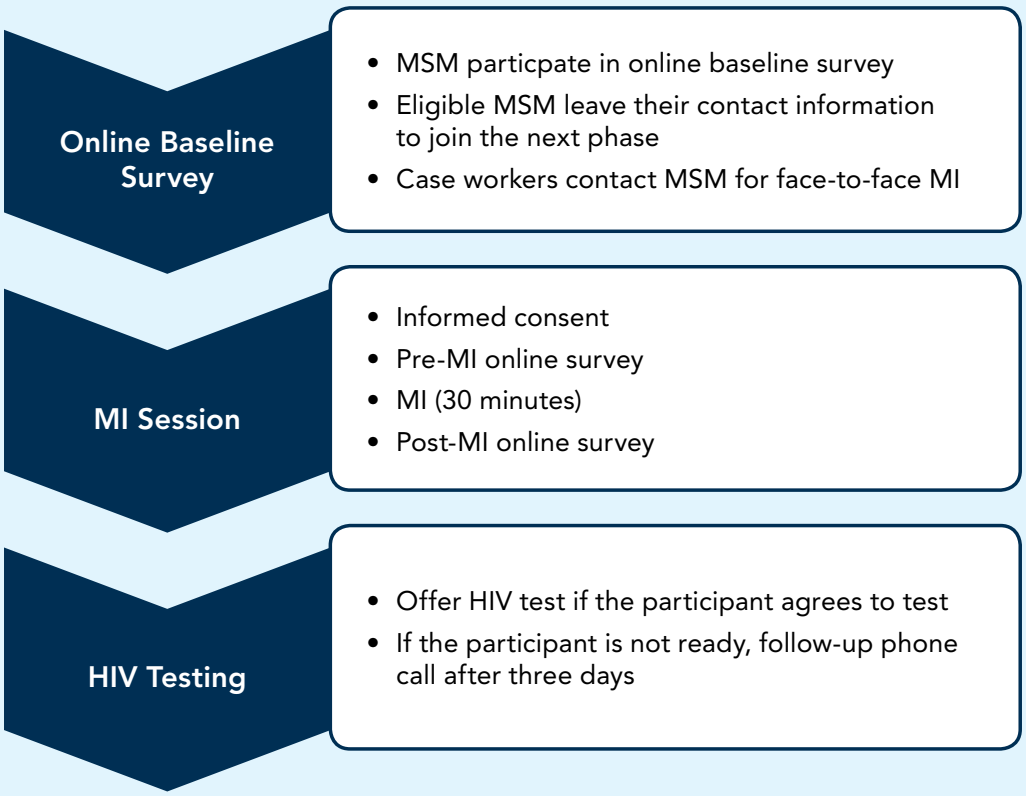
Barriers of HIV testing. Questions related to participants' experience and perception of HIV care facilities at 1) testing site, 2) clinical and lab visits and 3) pharmacies. Additionally, participants rate the level of satisfaction of their interactions with health providers and case workers.

The screening and baseline survey are available at Appendix I.

Phase Two

Our second aim was to conduct motivational interviewing intervention among MSM who have never been tested for HIV or for the period of 12 months. In this second phase of the study, the focus was implementation of the intervention that aims to increase HIV testing and linkage to care among MSM. A pre-post test was designed[20] to collect evaluative data on motivational interviewing. MSM who meet the selection criteria for Aim2 were asked to take a shorter online survey before MI and after MI. The surveys included important behavioural variables as well as attitudinal variables on HIV testing and treatment. Additionally, we collected data on participants' readiness to undergo HIV testing regularly and their satisfaction levels with the services provided by the case workers and the healthcare providers. The pre-post MI survey is available at Appendix II. Participants will be recruited from Phase one but with three additional criteria which is 1) never tested for HIV or in the period of 12 months, 2) willing to provide a phone number or email address, 3) willing to provide contacts of two friends for emergency. A similar consent procedure was followed in Phase 1. Case workers arranged a face-to-face meeting with participants at the CERiA or CBO and conducted a 30-minutes motivational interviewing session at their first visit. The session ends with reaffirmation of any commitment to undergo HIV testing and an option to complete a change plan. For those participants who are willing to undergo HIV testing and the meeting was conducted in CERiA, a rapid HIV test was offered right after the MI session. For meetings conducted outside CERiA, case workers schedule an appointment at a partnered health clinic and accompany them to HIV testing. A flow chart indicating the process of MI and HIV testing is indicated in Figure 4.

FIGURE 4. Study process of Online Baseline Survey, Motivational Interviewing and HIV Testing

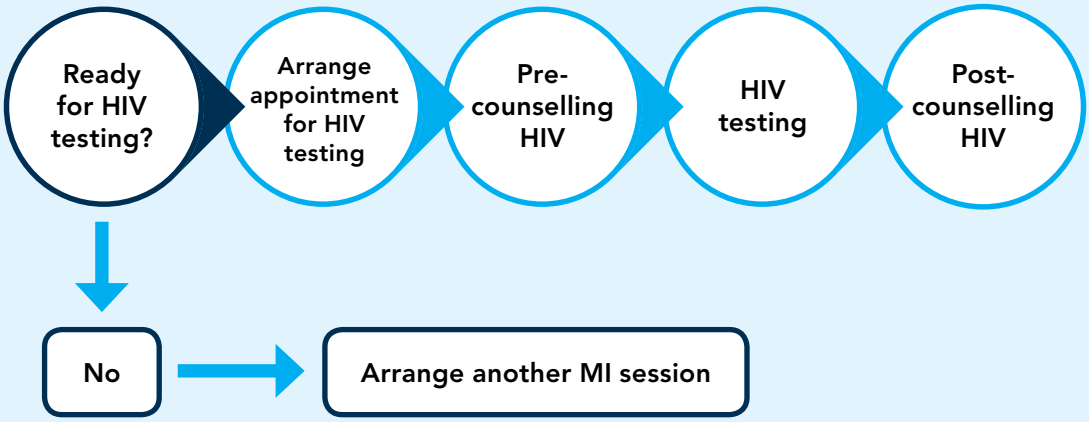


A systematic review and meta-analysis found that that previous studies have employed different populations, including case workers, in delivering MI for behavioural change (VanBuskirk, 2014). For example, a clinical trial study by Outlaw et al., shows that MI increased uptake of HIV testing among young African American MSM by the peer outreach workers who delivered MI during field outreach.[13] In this previous study, the peer outreach workers attended a full two-day basic training on MI by a clinical psychologist who was a member of the International Motivational Interviewing Network of Trainers organization (MINT). For the purpose of our study, we had applied a similar method of training of peer outreach workers. We utilised the existing peer case workers under the Malaysian AIDS Council project who are reaching out to MSM and link them to HIV testing at the government health clinics. To the best of our knowledge, no one in Malaysia belongs to the MINT international organization of MI and we therefore relied on local trainers on MI (Prof. Sajaratulnisah Othman and Dr. Alison Jackson from the Primary Care Unit, University of Malaya Medicine Centre) for the training of the case workers. The case workers have received four set of trainings which were conducted separately (Introduction, Practice, Refresher and Follow-up Training) on motivational interviewing principles. The training and case workers sessions was audio recorded and coded by independent codes using MI Treatment Integrity (MITI).[21] The case workers were asked to demonstrate fidelity to "case model of motivational interviewing" to indicate at least beginner-level competency before conducting the MI. The trainers monitored and assessed the quality of MI as they conducted mock interviews. The counseling sessions were audio-recorded and transcribed. The transcripts were assessed using the Motivational

Interviewing Treatment Integrity codes. Trainers then met with the case workers to provide feedback and continual training. The summary of the training and assessment of case workers recorded MI is available at Appendix IV.

All participants who tested positive for HIV were linked to care immediately following the post-test counseling. Participants who tested positive at the study site (CERiA) will be given information on the various health care settings available, to which after further discussion, they will be referred for treatment and to the case workers at KLASS for case management and support. They will be immediately supported to HIV confirmatory testing and linkage to care at the selected site. The case workers coordinated the medical appointment at the health clinics for confirmatory testing. They accompanied the participants during the process of the confirmatory testing, including general registration, blood draw, and scheduling of confirmatory test result collection. Subsequently, the case workers accompanied the participants to return the health clinics to collect the confirmatory test result. Similarly, thereafter, the case workers accompanied newly diagnosed MSM for contact tracing, CD4 testing, collection of CD4 test result, and initiation of ART. Follow-up for newly diagnosed MSM is done weekly by the case workers via social media (Facebook chat, Whatsapp, LINE) to provide support and ensure retention in care. Case workers also provided support to participants if they have issues adjusting their lives as HIV patients with their family, friends, and partners. Participants who were tested negative will be invited to return for HIV testing at 3-month follow up as part of the case management routine by the CBO.

FIGURE 5. Process of pre-test and post-test counselling after MI



All survey data were automatically stored to a server at University of Malaya (RedCap server) that has automatic/cloud backups and a state-of-the-art data security system. In the beginning of the study, we estimated the baseline survey would sample 300 MSM who have never tested for HIV. This estimation was a simple random sample derived from a population size of MSM in Kuala Lumpur between 50,000 and 700,000 with a HIV prevalence rate of 10%, and 95% Confidence Interval (7.37, 12.63). However, due to many setbacks encountered from the participants recruitment, we managed only to recruit 112 participants. Further challenges were discussed in section 3.

Phase Three Formative Research

In the final phase of this study, we aimed to evaluate motivational interviewing using pre-post design and explore the experiences of MSM who never tested for HIV or in the period of 12 months, in accessing HIV testing with the support of a case worker. In this phase, focus group discussions (FGDs) was initially planned for MSM and case workers. All case workers from KLASS (n=8) were invited to take part in FGDs. On the other hand, participants who have undergone Phase Two (motivational interviewing) were invited to FGD. However, for the FGD of HIV-positive MSM, our attempts to form a group with at least 5 participants have not been successful. This is because these MSM are newly diagnosed and were not ready to disclose their HIV status to others. Participation in an FGD would expose their HIV-positive status. Therefore, through the feedback from the case workers and participants, we considered an in-depth interview approach to be more appropriate to protect the privacy of these participants. We conducted 3 in-depth interviews with these newly diagnosed HIV-positive MSM.

All FGDs and interviews were conducted in English or Malay, depending on the choice of language by the participants (see Table 1 for the composition of FGDs).

TABLE 1. Composition of focus group discussion of MSM and case workers

MSM Participants		Case Workers
Age 18-25 and HIV negative	Age >25 and HIV negative	
n=6	n=5	n=8

In the focus group discussion and in-depth interview, participants provided qualitative data on the barriers to HIV testing before they were enrolled to the study, their experience in receiving peer counseling, their first HIV testing experience, and if tested positive, their experience with linkage to care. Notably, we did not provide technical details about motivational interviewing, a specific kind of counseling, to the participants. Instead, participants were asked to provide feedback on different aspects of the counseling given by the case workers. Participants were also asked to provide suggestions to improve the services provided by the case workers and healthcare providers. All interviews were tape-recorded and transcribed for qualitative data analysis using a standard qualitative data analysis software, NVivo.

A study field guide was developed to cover the following domains: (1) personal experiences with HIV testing, (2) attitudes, beliefs, and peer/social norms surrounding HIV testing and treatment, (3) barriers and challenges in getting a HIV test, seeking and adhering to treatment, (4) experience with counseling (motivational interviewing), (5) experience of first HIV testing, (6) satisfaction of services, and (7) other incentives that promote HIV testing and linkage to care. The Malaysian cultural-specific domains were also explored (e.g., family/family expectation, social taboo, stigma, religious beliefs). For the FGD of case workers, we explored the issues or challenges in online recruitment and conducting motivational interviewing and linkages to care (see Appendix III for field guide).

CHAPTER 3

Challenges & Limitations

Delay in project execution because of the change of research objectives and research protocol

The original project, which aimed to evaluate the case management program and the entire continuum of care, was rejected by the Ministry of Health due to concerns of focusing the evaluation of case management limiting to only MSM and conducting the study at their facilities and with their staff at the government health clinics. Therefore, the research objective was changed to focus on MI as a brief intervention to increase HIV testing. The original contract was signed in October 2016. Because of these changes, the revised proposal and budget were submitted to the World Bank in February 2017 and we received the revised contract from the World Bank on 16 March 2017.

Delay in project execution because delay in approval from the Medical Ethics Committee of University Malaya

Although we submitted the revised protocol to the MEC of University of Malaya in March 2017, it was reviewed by the ethics committee only in May 2017. The MEC committee members were concerned about the ability of the peer-based case workers to learn and deliver Motivational Interviewing (MI). The committee members noted that MI skills are not easy to master by paraprofessionals. The committee then required a detailed training protocol of MI, an evaluation plan of the training, and evidence that case workers have the skills to deliver MI. In response to the concerns of the committee, the research team developed a more detailed training plan and evaluation scheme using the material from the motivational interviewing network of trainer (MINT) website. The revised protocol was re-submitted in early May 2017 but it was not reviewed till 21 June 2017. This time, the MEC committee provisionally approved the project on the condition of additional plans to monitor the quality of MI during implementation. We submitted the plan accordingly and we received the written approval on July 11, 2017.

Low number of respondents who were eligible and interested to participate in the study

A total of 622 MSM completed the online survey. However, respondents who were interested to join the next phase of the study was 315 but only 134 MSM were eligible (reported to be biological male, at least 18 years old, Malaysian citizen, having anal sex with other men in the past 12 months, and never been tested for HIV). Of the 134 MSM, only 89 resided in Kuala Lumpur, Selangor and Putrajaya. Due to poor responses from the online survey, we therefore implemented the following strategies:

1. Easing the eligibility criteria from "never tested" to "testing more than 12 months ago"
2. We also contacted MSM CBOs such as Pink Triangle and other MSM WhatsApp groups to help us promote the study through their existing and personal contacts.
3. Pop-up advertisement using Grindr, a popular geosocial networking apps among MSM, was very successful in enrolling part icipants. However, the complimentary service by Hornet (study information was sent to individual mailbox of Hornet member) was not effective in recruitment. Additionally, we distributed the study advertisement cards at MSM saunas and clubs in Greater Kuala Lumpur.

4. In the previous protocol, the study was restricted to the greater Klang Valley area only. To reach the target number of participants, we expanded the criteria to include MSM from other states where we have local contacts who are connected to the MSM and there were no health services were provided for MSM. We identified Kuantan, Pahang as the site and successfully recruited 28 MSM from Kuantan.

High turnover among case workers at KLASS

A total of eight peer case workers from the CBO attended the MI training yet in the middle of the study, mainly due to lack of reward and recognition, six peer case workers resigned from the organisations. The General Manager of KLASS has reaffirmed the commitment from KLASS to include MI as part of the existing case management program. A set of operational indicators related to MI were incorporated in the case management program to help monitor and evaluate how case workers implement MI. The existing and new case workers had attended additional MI training which was conducted on 25th October and 3rd November 2017 by the research team.

Challenges in arranging follow-up visits with participants

Although stated they were willing to be contacted for follow up in the online survey, participants were not willing to come forward for follow-up visits. Reasons such as busy schedule, fear of exposure of identities as sexual minorities were common, even after assurance from our team that the case workers and researchers were peers. We also found that three respondents underwent HIV testing on their own after participating the online survey.

Challenges in arranging focus group discussion among HIV-Positive MSM

In the formative phase, we were not successful in arranging focus group discussion among HIV-Positive MSM. We offered to have the focus group discussion after working hours and on weekend, but the responses were very poor. This was possibly because these MSM were newly diagnosed and fear of being identified by other HIV-Positive MSM. We also reassured that the facilitator of the focus group discussion is also a HIV-Positive MSM but to no avail. After several attempts, we decided to change the approach to in-depth interviews. We interviewed only three HIV-positive MSM.

Strong self-selection bias in the participation in the online survey and MI intervention

MSM completed the anonymous online survey comprised a convenience sample of MSM who use social media and socio-sexual networking apps. Those who completed the survey may be more comfortable with their sexual identity and disclosure their behaviors in a research study. Respondents who were willing to be contacted by the case workers and eventually came to the study site to receive MI intervention may already in the "contemplation" stage in taking an HIV stage. Even though we explained to the participants that they were not required to undergo HIV testing and that the main objective of the study was to gather data to test the feasibility of MI, some participants were apathetic about HIV testing did not come forward for MI. Although we couldn't ascertain the self-selection bias, such bias may explain the relative success of MI in the study.

CHAPTER 4
Results

Barriers of and Facilitators to HIV Testing in a Large Online Survey

The online survey was implemented from 25 July 2017 to 26 February 2018. During that period, a total of 2,719 clicks were recorded but only 622 respondents completed the online survey. In terms of ethnicity, the majority were Malay (66.7%), followed by Chinese (19.3%), others (9.3%) and Indian (4.7%). Young MSM (defined as age between 18-25 years), together with those between the age of 26-30 years were the majority of participants (72.8%). Although the online survey was open to MSM across the country, more than half indicated their residence in Greater Kuala Lumpur (68.6%). Details of socio-demographic and HIV risk behaviour data are available at Appendix V.

Based on the online survey, out of the 622 respondents, only 62% ever tested for HIV (Figure 5). The barrier for HIV testing among those respondents who previously went for testing is illustrated in Figure 7. Among those who never tested, reasons for not having an HIV test are illustrated in Figure 8. The history of last HIV testing is illustrated in Figure 9 and previous HIV testing sites are illustrated in Figure 10.

FIGURE 6. Proportion of respondents who have ever tested for HIV and those who have not

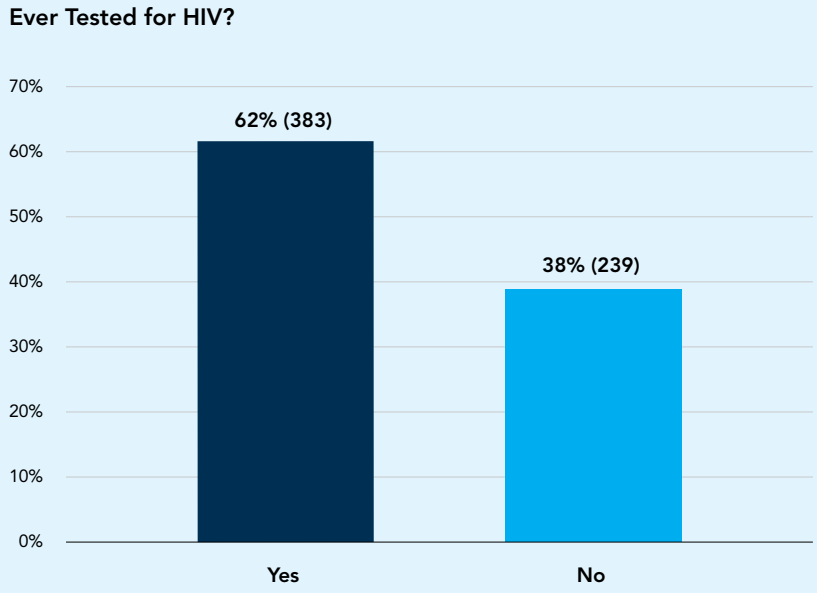


FIGURE 7. **Problems encountered when tested for HIV in the past among respondents who have undergone HIV testing (multiple answers)**

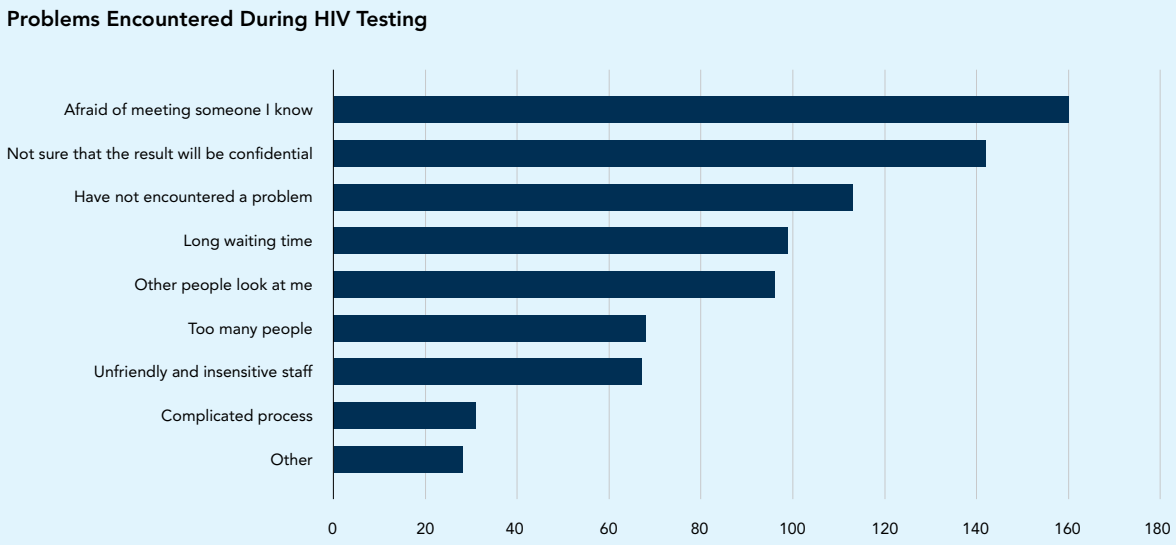


FIGURE 8. **Reasons for not going for testing among respondents who never tested for HIV (multiple answers)**

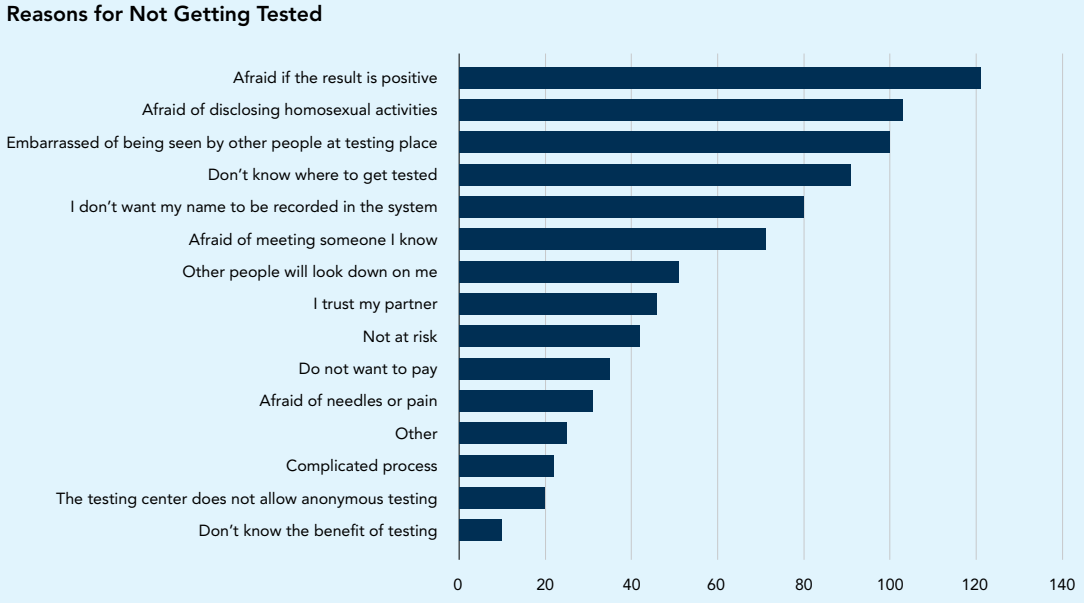


FIGURE 9. Last HIV testing date

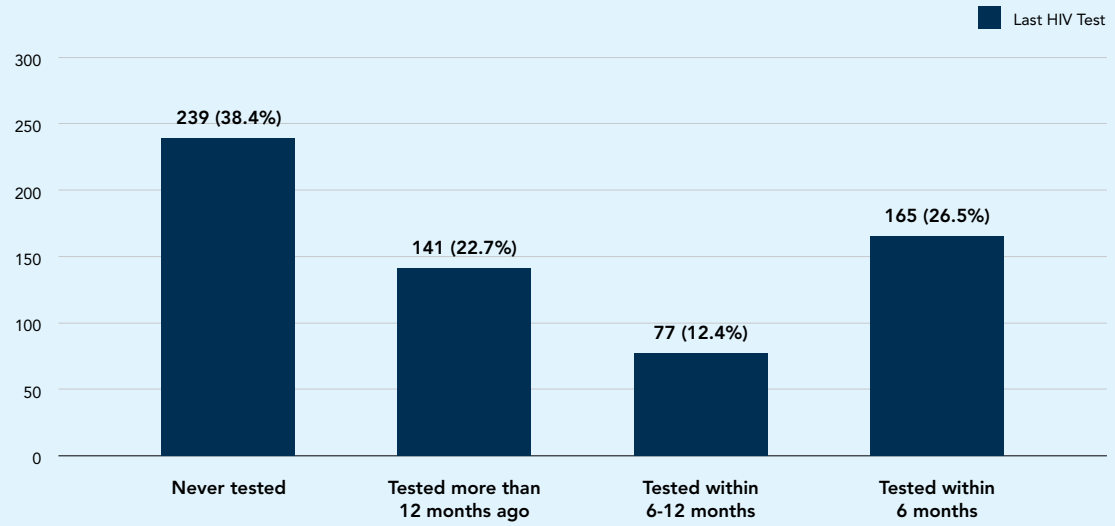
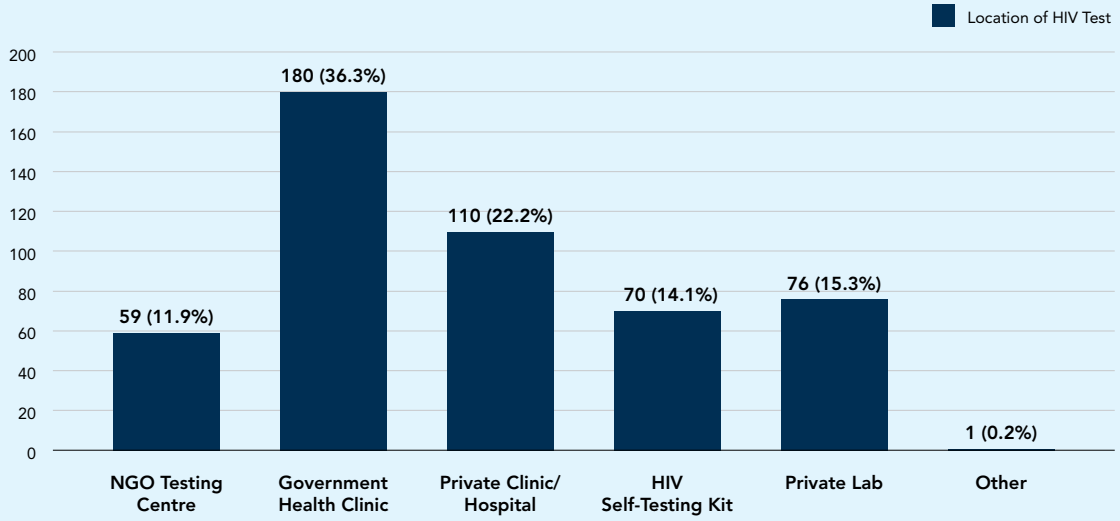


FIGURE 10. Previous HIV testing sites among those who have tested for HIV (multiple answers)



Motivational Interviewing (MI)

MI and HIV Testing

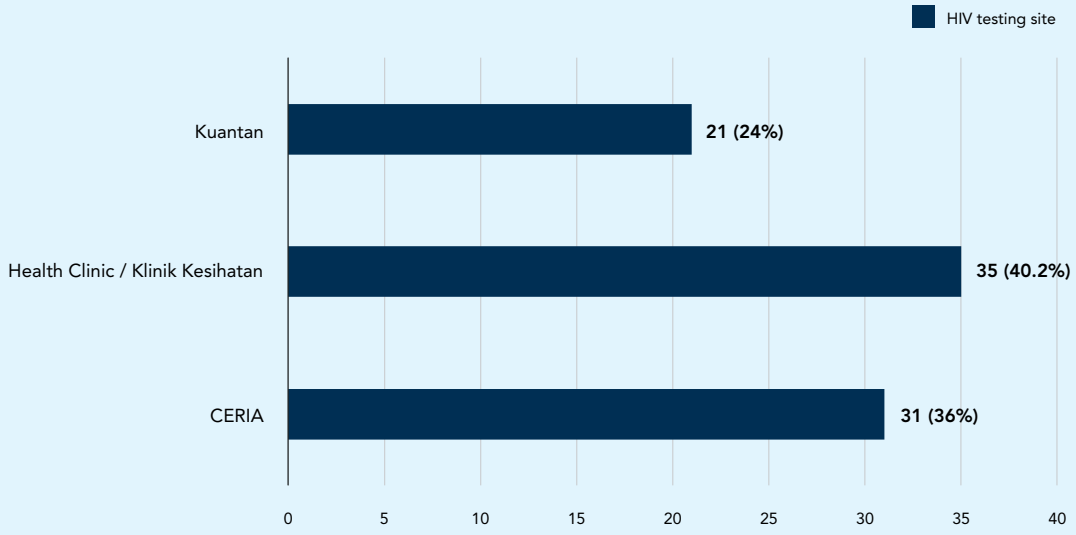
Of 622 MSM who completed the online survey, 420 were living in Greater Kuala Lumpur (KL, Selangor and Putrajaya) (see Table 2 for residential states of participants. Of these men, only 167 were never tested or tested more than 12 months and were eligible for the next phase of study.

TABLE 2. Residence of participants by state

State	Number (Percentage)
Johor	19 (3.1%)
Kedah	12 (1.9%)
Kelantan	10 (1.6%)
Kuala Lumpur	192 (32.9%)
Labuan	3 (0.5%)
Melaka	8 (1.3%)
Perak	17 (2.7%)
N. Sembilan	23 (3.7%)
Pahang	50 (8.0%)
Perlis	2 (0.3%)
P. Pinang	22 (3.5%)
Sabah	15 (2.9%)
Sarawak	18 (2.9%)
Selangor	222 (35.7%)
Terengganu	3 (0.5%)
Putrajaya	6 (1.0%)

Further, only half (n=89) were interested and left their telephone numbers and/or email addresses for follow-up.[2] To increase the number of participants, the study was later expanded to include MSM living in Kuantan, a town in the Northeast peninsular of Malaysia where HIV prevention programs for MSM were absent. Our team recruited 28 participants in Kuantan during 21-23 Dec 2017. Motivational interviewing (MI) was conducted for a period of 5 months from 6 September 2017 to 11 February 2018. A total of 112 participants received MI. After MI, 87 participants agreed and underwent HIV test.

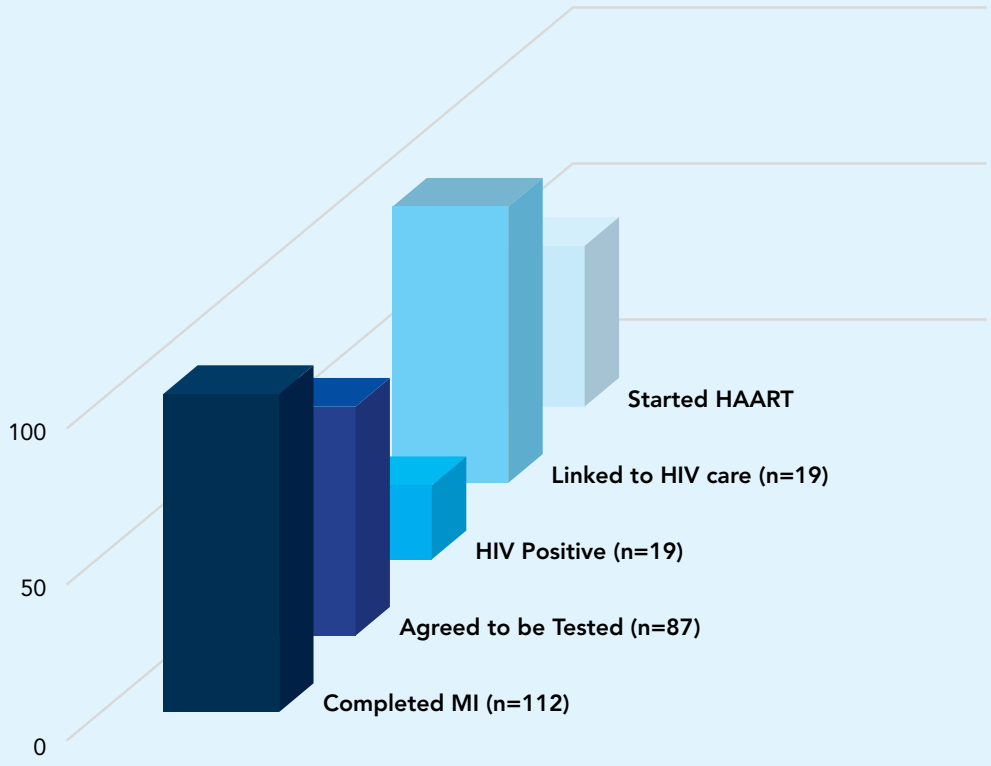
FIGURE 11. The HIV testing site in the present study



Of these men, 19 (21.8%) were tested positive for HIV (see Figure 12 for details). All newly diagnosed MSM were linked to health clinics and/or hospital and 13 had started antiretroviral treatment.

2 Regardless of HIV testing history and residence, participants who were willing and who were unwilling to leave their contact information differed in age group, education level, and sexual identity. Those who were willing to leave their contact information were more likely to be 25 years old or younger, attain education under university, and identified as transwoman (data not shown).

FIGURE 12. Number of participants completed 1) motivational interviewing, 2) HIV testing, 3) linked to care, 4) started HAART (Highly Active Antiretroviral Treatment)



General Concerns Prior to MI and HIV Testing

The analysis of pre and post MI survey shows that MSM at the mean scale of 8.08 (scale 1 = strongly disagree; 10 = strongly agree) agreed that they were worried about getting HIV test in the next 3 months. After MI, this concern was reduced to 7.81 (see Table 2). Before the intervention, participants also indicated that they were worried about getting HIV/AIDS at the mean scale of 7.62 but such concern was reduced to 7.11 after the intervention. However, when asked if they were worried about getting HIV tested, participants were slightly worried at the mean scale of 5.74 and but it was reduced to 5.41 after the intervention (the comparison of means was not statistically significant, however). Details of the analysis were displayed in Table 3.

TABLE 3. General concerns before and after MI

General concerns	Pre-MI	Post-MI	t-test	p-value
Planned to get a HIV test within the next 3 months (scale 1-10), mean	8.08	7.81	-0.11	0.913
Worried about getting HIV/ AIDS (scale 1-10), mean	7.62	7.11	2.037	0.044
Worried about getting a HIV test (scale 1-10), mean	5.74	5.41	1.297	0.197

Specific Concerns Prior to HIV Testing

Of the 13 specific concerns prior to HIV testing, 74.8% of participants agreed that their primary concern about getting HIV testing is fear of positive test result. The second and third concerns were confidentiality (56.8%) and fear of stigma and discrimination from family, friends or other people (45.9 to 55.9%). However, our analysis shows that these concerns were reduced after MI (see Table 3). For example, after the intervention, only 71.20% felt concerned if they tested positive, 38.7% MSM worried about confidentiality and around 39.60% to 46.80% fear of stigma and discrimination. The differences between the specific concerns were found to be statistically significant before and after motivational interviewing.

Prior to MI intervention, one-third of participants agreed that it was inconvenient to go to clinic, 19.8% felt they were uncomfortable with any doctor, 14.4% knew someone who had a negative experience at the clinic, and 11.7% felt HIV testing was expensive. After MI intervention, only 27% agreed it was inconvenient to go to clinic, 11.70% felt they were uncomfortable with any doctor, 10.80% knew someone who had negative experience at the clinic, and 8.4% felt that HIV testing was expensive.

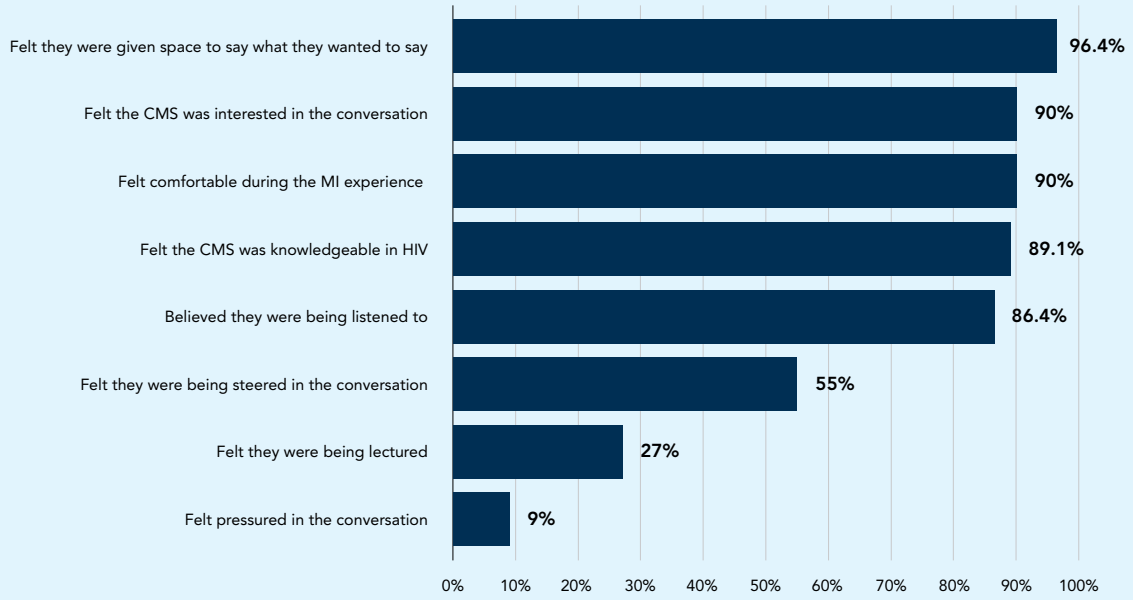
TABLE 4. Specific concerns about getting a HIV test

	Pre-MI	Post-MI	x^2	p-value
I'm scared I'll test positive	74.80%	71.20%	38.906	<0.001
I'm worried my results will be made public	56.80%	38.70%	28.585	<0.001
I'm afraid of being judged by other people	55.90%	46.80%	52.72	<0.001
I'm afraid of being judged by family	49.50%	42.30%	46.309	<0.001
I'm afraid of being judged by friends	45.90%	39.60%	53.492	<0.001
It is inconvenient to go to the clinic	33.30%	27.00%	40.289	<0.001
It's scary	29.70%	24.30%	23.301	<0.001
I have no symptoms	28.80%	21.60%	37.816	<0.001
I don't have time	24.30%	18.90%	15.154	<0.001
I am not comfortable with any doctor	19.80%	11.70%	6.426	0.011
I know someone who had a negative experience at the clinic	14.40%	10.80%	29.777	<0.001
It's too expensive	11.70%	8.10%	10.149	0.001
I don't need HIV testing because I already protect myself	5.40%	8.10%	14.94	<0.001
I had a negative experience at the clinic	3.60%	5.40%	39.306	<0.001

Satisfaction Levels of MI

The results of the post-MI survey are shown in Figure 13. Majority of the participants (90%) agreed that they were satisfied with the MI intervention, 27% felt that they were being lectured and 9% felt pressured in the conversation.

FIGURE 13. Participants' experience with MI



CMS = case management specialist

CHAPTER 5
Discussion and Recommendations

The present study has pilot tested motivational interviewing to increase HIV testing among MSM. Our results suggest that the addition of motivational interviewing to online outreach may be effective in encouraging MSM to learn their HIV status. Currently, the only two local CBOs serving MSM in Kuala Lumpur are using online platforms to reach MSM who engage in risky sexual behaviors and linking them to HIV testing and case management. The client-centred approach of motivational interviewing can help case workers engage with new clients by actively listening to the underlying concerns that the clients may have regarding using protective measures to prevent HIV transmission (e.g. consistent condom use) and barriers to getting an HIV test. Therefore, these CBOs and the other smaller CBOs have expressed interest in learning skills of MI and incorporate MI in their counseling with clients.

The sample of our study consisted of mostly young MSM who have never tested for HIV. Participants in the study expressed high level of satisfaction about MI. Although about one fifth of participants (n=25) did not proceed to HIV testing after receiving MI, we considered that testing rate in our study was high. Following the theory of motivational interviewing, we recognized that some participants were in the pre-contemplation stage for behavioural change and a 20-minute session of counseling might not be sufficient to change their behaviour. Consistent to the spirit of MI, the case workers respected the decision of the participants and did not coerce them in taking HIV test.

Because the pilot study did not use a randomized trial design to evaluate MI, the study was not designed to test the impact of the intervention using gold-standard methodology. However, the pre- and post-test showed that the worry about getting HIV/AIDS had reduced and specific concerns about getting an HIV test had also reduced significantly (see Table 4 for details of specific concerns). The qualitative data from the case workers and participants who have received MI expressed positive feedback on the intervention.

The present study found that more than one third of participants have never tested for HIV in their life, supporting the findings from previous studies that uptake of HIV testing among MSM is low. Therefore, the results indicate that Malaysia is far from achieving the 90-90-90 target set by the UNAIDS. From the online survey and focus group discussion, we learned that the barriers to HIV testing are multilevel. At the individual level, fear of HIV positive result,

low risk perception, and poor knowledge about success of HIV treatment and benefits of early treatment were the major barriers. Additionally, fear of disclosure of homosexual behaviors and confidentiality were the major concerns expressed by the participants. Therefore, most MSM do not access testing services at the government health clinics because of perceived stigma and discrimination. Additionally, many participants reported that they were afraid to be seen by others at the testing site, which may identify them as gay or bisexual or someone who is at high risk for HIV infection. A more friendly and private setting, in terms of organizational and physical environment, as well as training of case workers and healthcare workers in addressing the specific needs of MSM, are needed to create an environment of acceptance and confidentiality.

The barriers to HIV testing among MSM are attributed to the social stigma rooted in society which manifests at the individual, interpersonal/community, and structural levels. According to the socioecological model, structural interventions such as removal of legal and policy barriers to HIV prevention for MSM are most likely to yield maximum impact in reducing HIV transmission among MSM. While structural-level interventions are needed to protect the rights of MSM in accessing health services, we propose two approaches that will likely improve the HIV prevention services for MSM:

First, the government needs to consider investing in innovative approaches such as the online outreach and case management, which demonstrates high uptake of testing among high risk MSMs. This investment includes revision of incentivizing schemes for case workers and comprehensive training to sustain and retain case workers. The turnover rate of case workers at our partner CBO was very high and it posed challenges to this project. Towards the end of the study, only two out of ten case workers remained in KLASS and they were highly committed to completing the project. Low wages, lack of reward and recognition and nonstandard work schedules were among the reasons for the low motivation reported by the case workers.

Second, task shifting of HIV testing and counseling has been successful in improving access to testing and reducing loss to follow up.[22] MI is delivered by providers of various professional credentials and background, including nurses, dietitians, case managers, and health educators.[23] Counseling by nurses and psychologists is expensive and not feasible in a resource-limited setting such as Malaysia. Participants in the study indicated that the peer support is the strength of the intervention. Therefore, professional training to case workers to conduct motivational interviewing is a more practical and effective approach. Continual training on MI will be necessary to maintain the quality of MI.

A targeted, comprehensive prevention program is needed so that MSM who are at elevated risk for HIV infection can be reached and linked to testing and care. There are specifically three recommendations for multi-stakeholders to increase access to HIV testing among MSM:

1. **Peer-based HIV testing and alternative modality of HIV testing.** Fear of stigma and discrimination, participants reported that they prefer to be approached by peers. Task-shifting of HIV testing to outreach workers may be effective – will save time from referral to HIV testing at the government health. Other testing modality, such as online testing, self-testing or home-based testing should be explored. These testing modalities can be

administered with or without the assistance of case workers using social media. These testing modalities can overcome logistic challenge in administration of HIV testing and empower them in protecting themselves.

2. **Increase sexual education and promotion of testing and treatment in various physical and social media venues.** Currently, many MSM misunderstand that their own level of risk, do not know about effective prevention strategies, benefits of early treatment, and MSM-friendly services available in Kuala Lumpur. The health promotion materials should be tailored to MSM and strategically placed at venues or social media places where MSM frequent. Young MSM who are currently studying in college or university should have access to comprehensive sexual education that explicitly address the sexual health issues pertinent to young MSM, including anal sex, substance use and mental health.

3. **Cultural competency training among healthcare providers at the government health clinics.** A comprehensive training on human sexuality, specific health and social needs of MSM are needed to dispel the negative stereotype of gay men. The healthcare providers must understand the unique sexual and mental health needs of MSM and that the health disparities of MSM are explained by homophobia and cultural marginalization. Additionally, information about existing MSM-friendly health clinics in Malaysia should be promoted in social media used by MSM.

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Appendix

APPENDIX I – BASELINE QUESTIONNAIRE
APPENDIX II – PRE AND POST MI QUESTIONNAIRE
APPENDIX III – FOCUS GROUP DISCUSSION FIELD GUIDE
APPENDIX IV – MOTIVATIONAL INTERVIEWING TRAINING AND SUMMARY
APPENDIX V – SOCIO-DEMOGRAPHIC DATA OF ONLINE SURVEY RESPONDENTS