Published in final edited form as:

AIDS Educ Prev. 2017 October ; 29(5): 401–417. doi:10.1521/aeap.2017.29.5.401.

Adaptation of the HIV/AIDS Self-Management Education Program for men who have sex with men in Thailand: an application of the ADAPT-ITT framework

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INTRODUCTION

Thailand is one of the Asian countries most severely affected by HIV. The country has a population of more than 67 million, 440,000 of whom are HIV positive; and 70% of people with HIV live in 33 of 76 Thai provinces (Joint UN Program on HIV/AIDS, 2013). Since the onset of the HIV/AIDS epidemic in the late 1980s, Thai men who have sex with men (MSM) have been heavily affected by HIV (Beyrer et al., 2011). MSM continue to represent the majority of HIV incidence and prevalence. Data reveal a high prevalence of HIV infections among young MSM in Thailand: 17.3% in 2003; 28.7% in 2005; 32.7% in 2007; 28.3% in 2009; and 21.3% in 2011 (van Griensven et al., 2013). Over the past decade, it has been well documented that Thai MSM face a significantly higher HIV infection than the general population. Given the high burdens of HIV and high rates of acquisition, Thai MSM may be the most vulnerable members of Thai society today (Johnston et al., 2016). HIV/AIDS is now routinely characterized as a chronic yet manageable disease (Hoy-Ellis & Fredriksen-Goldsen, 2007). People living with HIV (PLWH) are living longer due to the advent and subsequent improvements in antiretroviral therapy (ART). Nonetheless, they still must manage the unique symptoms, medical challenges, and sociocultural stressors related to the illness. Because of these, it has been argued that systems for organizing chronic disease care should routinely include programs to teach patient self-management skills and behavioral change (Wagner et al., 1996). Hence, the emergence of HIV/AIDS as a chronic disease calls for health education programs to teach PLWH to be effective managers of their own health. Nonetheless, there have been few models for helping PLWH learn the skills necessary to accomplish good self-management. Although interventions for PLWH have been described in literature, interventions generally have been designed to improve psychological symptoms, to decrease risk behaviors, and have not really focused on self-management skills (Gifford et al., 1998). Also, there is a paucity of empirical data on HIV/

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AIDS self-management in Thailand and there has no partial or adapted use of self-management model with HIV-positive Thai MSM. So, there remains a need for studies that will test the feasibility of using HIV/AIDS self-management education models in the Thai context. This paper aims to describe the use of the ADAPT-ITT (Assessment - Decisions on program augmentation - Adaptation - Production - Topical Experts - Integration - Training - Testing) framework to modify the original HIV/AIDS Self-Management Education Program (HASMEP) (Omisakin, 2011) for use with HIV-positive Thai MSM. The HASMEP was developed by Omisakin (2011) in response to the self-management education needs. We also evaluate the feasibility and acceptability related to exposure to the HASMEP intervention.

METHODS

This feasibility study adapted the HASMEP for use with HIV-positive MSM in Thailand by employing the ADAPT-ITT model as the methodological framework (Wingood & DiClemente, 2008). The title of the ADAPT-ITT model denotes its eight phases: (1) Assessment, (2) Decisions on Program Augmentation, (3) Adaptation, (4) Production, (5) Topical Experts, (6) Integration, (7) Training, and (8) Testing. The ADAPT-ITT model has been used extensively to adapt HIV prevention Evidence Based Interventions (EBIs) for at risk population including HIV-positive MSM (Armstrong et al., 2015; Sullivan et al., 2014; Bere et al., 2016). In this study, the first six steps of the ADAPT-ITT model were used to adapt the HASMEP (See Table 2).

Phase 1: Assessment

The first step of the ADAPT-ITT phase was done to understand the perception and need of target population. The self-administered anonymous surveys via Facebook were conducted to assess the relationships of HIV/AIDS beliefs, self-efficacy for AIDS preventive behaviors, perception of HIV as a chronic disease, and HIV risk behaviors among young Thai MSM. Banner ads were developed and placed on Facebook. We targeted Thai men who indicated an interest in men on Facebook profiles and reported their residency in Thailand. Banner ads and surveys were in Thai language. Upon clicking on the banner ads, the potential participants were linked to survey information. The respondents were told the survey would take about 30 minutes, guaranteed anonymity, and participation was voluntary. We did not offer incentives for participation. After obtaining electronic informed consent, we invited the respondents to complete the survey. Eligibility criteria for participation included: being born male, being between 18–21 years of age, and self-reporting having had sex with a man in the previous 6 months. Data were collected over a two-week period of September 2015. Logistic regression analysis was used to analyze data (see our findings in a result section). The findings of this phase influenced phase 2.

Phase 2: Decisions on program augmentation

This step aimed to: (a) review the interventions defined as EBIs; (b) decide which EBI to select for the new target population; and (c) decide if the EBI should be adopted or adapted. To identify an appropriate EBI, in addition to the findings from Facebook online survey on phase 1, We systematically reviewed the literature related to self-management intervention in HIV-positive MSM, eight EBI related to self-management in HIV-positive MSM were

identified. We selected the intervention based on the inclusion of five elements: (1) theory-driven; (2) used techniques compatible with health educational program; (3) prior implementation in semi-rural area; (4) appeared suitable for delivery by health care providers; and (5) inclusion of a component addressing stigma and self-management strategies. Using these criteria, we chose the HASMEP developed by Omisakin (2011) to provide an optimal foundation for our intervention. It is the program that focuses on self-management health education for chronic HIV infection. The HASMEP includes three primary activities: (1) supervised dialogue; (2) physical activity; and (3) education and psychosocial support. This program was first developed for adults HIV/AIDS patients recruited from a clinic in a semi-rural area in KwaZulu-Natal province of South Africa. It was socially acceptable, and provided accessible education and training manuals (Omisakin, 2011). It has been developed to address the needs of PLWH for self-care support and increase the capacity of people to self-manage their conditions. It is designed to inform, motivate, and improve skills of PLWH who wish to become better self-managers. The HASMEP consists of fourteen modules and emphasizes participants' central role and responsibility in managing their illness (See Table 1). Previous study showed that this program had beneficial effects positively and significantly on the mean CD4 cell counts, self-management behaviors, and health status of PLWH (Omisakin, Ncama, Igbinlade, & Ayandiran, 2015).

Despite the strengths of the HASMEP curriculum, we decided that adaptation was more appropriate than adoption. The primary reason for this judgment was the need to make some components more culturally relevant to Thai MSM than those in the original content. We then proceeded to Phase 3.

Phase 3: Adaptation

In this phase, we used 'theater testing', an innovative method which aims to gather additional feedback on program modifications from members of the target population, analyze the results, and use the findings to further refine the program. Our aim was to pre-test the program by presenting it to members of the target population and ask them to respond.

Eligibility criteria and recruitment process—Following approval by the Institutional Review Board (IRB) of Sappasithiprasong hospital, we contacted the participants, including HIV-positive Thai MSM and health care providers at the HIV clinic, and informed them about the study. HIV-positive Thai MSM had to be living in Ubonratchathani province, 18 years of age or older, and fluent in Thai. Health care providers had to be 18 years of age or older, fluent in Thai, and involved in actively treating PLWH in the clinic for at least 1 year. If interested in participating, they then were invited to participate in the study. We provided a brief description of the study, and answered any questions from participants. Then, they were asked to provide written consent for participation. Once informed consent was obtained, they were asked to participate in a focus group that took place in the HIV clinic at a mutually agreed-upon day and time.

Theater test sample—A total of 48 participants were recruited from the HIV clinic to participate in the theater test. We conducted 5 focus groups (FGs) with the following groups of people: HIV-positive Thai MSM (4 FGs; $n = 40$ total); and health care providers (1 FG; $n = 8$ total). All FGs were conducted in a private conference room at the HIV clinic; each group lasted about 3 hours. Each participant received 350 Thai Baht for transportation and/or parking (US \$1=35 Thai Baht).

Theater test process and data collection—During theater testing, principal investigator (PI) and 2 facilitators facilitated all groups, and implemented 14 modules of the original HASMEP (Omisakin, 2011) that capture core elements of the intervention. All modules were selected for theater testing because we were unsure about how the HASMEP might fit well within the Thai chronic care context of self-management for HIV. To facilitate an accurate assessment of reactions to the HASMEP, each participant was given an outline of the HASMEP and asked to share their opinions on its appropriateness for the community. Brief information in the outline was translated from English to Thai language from the original HASMEP curriculum (Omisakin, 2011). The sessions were stopped periodically to allow the participants to provide feedback on each module of the program. After each module, participants received questions to reflect on critiques of the materials, content, and delivery of the HASMEP intervention. Questions for all participants included: (1) “What did you like or dislike about the sessions?”; (2) “What would change/add to and could be improved in the program?”; and (3) “Would you recommend it become a permanent feature of care?”. We also collected additional data by asking the participants to give feedbacks on the interest of each activity, clarity of activity instructions, willingness to participate in the program in the future, and satisfaction and comfort in completing each activity.

Theater test data analysis—We constructed a data analysis plan around the following key domains.

Feasibility. This was primarily measured by data collected on study metrics. We completed data collection matrices on the processes of recruiting and enrolling participants. Key outcomes were: (a) recruitment rate of HIV-positive Thai MSM expressing interest in participation, (b) screening rate, (c) enrollment rate, and (d) time taken to recruit 40 HIV-positive Thai MSM. Simple descriptive analysis was conducted to describe key outcomes.

Acceptability. This was measured in FGDs. Participants were asked about their attitudes toward the content of each module. All five FGDs were audio-recorded with participant permission and transcribed verbatim. Detailed notes were taken at FGDs where the HASMEP intervention was discussed. We coded and analyzed the responses to the FGs using thematic content analysis with a conventional approach (Miles, et al., 2013). This analysis was conducted to identify manifest content, which provides information on what was said. Qualitative coding was conducted by a couple of independent coders and interrater agreement was calculated by the PI of this research project to ensure agreement for each FG. After completing the coding process, a list of themes was compiled to obtain salient themes. Themes considered most salient were those that emerged most frequently within and across participants’ response in FGs. Then, the salient themes emerged from the participants’

response on each module were identified (see our findings in the result section). Next, we proceeded to Phase 4.

Phase 4: Production

This phase aimed to create draft 1 of the adapted HASMEP for HIV-positive Thai MSM and to provide a description of what should be covered in each module. Once the theater test was complete, participants' feedback was thoroughly reviewed, analyzed, and used to adapt the materials, activities, and content to improve effectiveness and increase relevance of the HASMEP. The PI drafted initial changes to the original HASMEP. Feedback/suggestions were incorporated into the content, activities, and materials based on major findings from the theater testing FGs. We preserved the fidelity to the core elements (problem solving, decision making, resource utilization, formation of a patient/health care provider partnership, and taking action) of the original HASMEP, internal logic (the relations between the original components and main outcomes of the original HASMEP) by assessing the capacity of the HIV clinic to provide healthcare services and the resources available for successful service delivery and integration. As a whole, the revised content involved a number of changes made to the original HASMEP. Then, draft 1 of the adapted HASMEP created in this phase was sent to the topical experts to review and refine.

Phases 5 and 6: Topical experts and Integration

After producing draft 1 of the adapted HASMEP, we asked three topical experts (clinician, nurse, and nursing instructor) to review the curriculum. The selected topical experts had expertise in a group health education program in PLWH, self-management in MSM, and HIV/AIDS. They were provided background of the study and given the overall content of the original and adapted HASMEP, a summary of the feedback from the theater test, and fidelity to the essential components of the original HASMEP. Then, the PI met with three topical experts in person and by phone. They provided their feedback, as well as comments that helped direct the researchers in further refining the adapted HASMEP. Those feedback/comments were reviewed and then incorporated to draft 1 to create draft 2 of the adapted HASMEP curriculum. Next, we integrated a readability testing into draft 2 to create draft 3 of the adapted HASMEP. Subsequently, we tailored content of draft 3 to HIV-positive Thai MSM reading to increase comprehension of the adapted HASMEP. Then, in response to participants' feedback (collected during the theater test), we prepared for the next 2 steps (Phase 7 and 8) to disseminate and implement draft 3 of the adapted HASMEP in HIV clinic setting.

Phases 7 and 8: Training and Testing

The last two phases are currently in preparation. In Phase 7 - Training, we have a training plan to prepare health care staff in HIV clinic for delivering the intervention. The training will include both theoretical background and rationale for each module of the adapted HASMEP, familiarizing health care providers with intervention delivery, and role playing with simulated patients. Also, in Phase 8 - Testing, we will conduct a pilot randomized controlled trial (RCT) to examine the usability and efficacy of the adapted HASMEP compared to standard of care in a large sample of HIV-positive Thai MSM over a long-term

follow-up. The RCT may be helpful to supplement our findings on acceptability of the HASMEP reported in this study.

RESULTS

Results from Phase 1: Assessment

Logistic regression analysis suggested that factors related to sexual risk behaviors included age (18 and 21 years), having a current regular male partner, self-efficacy for AIDS preventive behaviors (self-efficacy in refusing sexual intercourse, self-efficacy in questioning potential sex partners, and self-efficacy in condom use), AIDS health belief (perceived susceptibility to HIV/AIDS, perceived severity of HIV/AIDS, perceived barriers to condom use, and cues to action for HIV/AIDS prevention) ($p < .01$). We also found that perception of HIV as a chronic disease (perceived self-management, perceived health threat, and perceived status disclosure) was significantly related to sexual risk behaviors among young Thai MSM. These findings have been previously reported (Khumsaen & Stephenson, 2017).

Results from Phase 3: Adaptation

Participant Demographics—Of the initial 42 eligible HIV-positive Thai MSM participants who were approached for participation, 1 was found ineligible after consent and 1 declined to participate in FG; subsequently, 40 HIV-positive Thai MSM participated in total. The mean age of HIV-positive Thai MSM participants was 29.95 years (range, 19–52 years). Most participants were employed and had some college education. The participants had varying time since HIV diagnosis. Median time since HIV diagnosis was 4.5 years (range, 1–10 years). Only 4 of them (10%) disclose their HIV status to others, mainly family members. Their demographics are well representative of the HIV outpatient clinic population. Furthermore, there were 8 health care providers (7 female and 1 male) in HIV clinic; all of them are nurses and participated in FG. They all have one or more years of work experience at the HIV clinic.

Major findings from HIV-positive Thai MSM and healthcare providers in FGDs—All feedback/suggestions were analyzed using thematic content analysis. Illustrative quotations from HIV-positive Thai MSM and health care providers are incorporated in the text in quotes.

Internal and external stigma—HIV-positive Thai MSM commonly described stigma as “negative labels” “discrimination,” and “derogatory looks”. Some of them stated that they “don’t want to go see people”; others just “it’s the biggest mistake getting HIV.” HIV-positive Thai MSM experienced a wide range of stigma, both internal and external stigma, most significantly seen in the change of their social activities, not in their family. Mostly, HIV-positive Thai MSM felt that their family members are very supportive, sympathy, and understanding their illness. One of them stated that, “*Ever since I was diagnosed (HIV), my parents have been very supportive; they never blamed me...they take care of me.*” Furthermore, some HIV-positive Thai MSM clearly attributed stigma to their own sexual practices; many of them reported negative (e.g., guilt; “*I got HIV because of my bad sexual*

behavior; it is karma”) feeling about living with HIV. Another one shared that, *“I lost my job because my illness leads my boss to suspect that I was HIV-positive”*.

Health care providers acknowledged stigma as a common issue, reported by almost all of their patients, such as *“They (patients) told me that when they disclosed their HIV status, others looked at them like an alien...it was derogatory look”*. One health care provider added that, *“it occurs in all patients; however, as I know, their families are very supportive. Perhaps, this is the main reason that our patients do not disclose their HIV status”*.

Applied knowledge about HIV/AIDS and self-efficacy in condom use—During the theater test focus groups, HIV-positive Thai MSM expressed their thoughts related to applied knowledge about HIV/AIDS. Several of them stated that they had difficulties with distinguishing symptoms in each stage of “WHO clinical 4 stages of HIV/AIDS”. As one stated, *“They are a number of symptoms in each stage; so, it’s hard to distinguish and recognize all of them...I think, this should be amended”* or that *“I think it’s okay; but I can’t remember all content. I struggle to easily grasp it...anyway, is it possible to make it brief and clear?”*

Health care providers suggested that the terms and language used to describe clinical staging of HIV/AIDS should be simple and practical. It must be explainable in a concise and easy to understand language. As one stated, *“I think this (WHO clinical 4 stages of HIV/AIDS) is quite hard for patients to grasp entire content; it’s complicated and too difficult for patients to apply”*. Another one commented that *“This contains a lot of technical terms...patients can’t follow all of them; so, this needs to be edited to better reflect the clinical stages of HIV/AIDS”*.

Moreover, health care providers and HIV-positive Thai MSM suggested adding more terms commonly used. As one health care provider stated that *“The terms ‘CD4 cell count’, ‘HIV viral load’ are widely known among us (providers and patients); so, I think these should be added into this module”*. Another suggested, *“This module did not contain the definition of AIDS; besides, I think we need to advise patients about how CD4 cell counts and HIV viral load are used”*. One HIV-positive Thai MSM further elucidated *“If we got all information regarding HIV, AIDS, CD4, viral load, and how they related to each other, this would be helpful for us”*.

Additionally, health care providers and HIV-positive Thai MSM raised the issue related to self-efficacy in condom use. Several of HIV-positive Thai MSM stated that they had difficulties buying condoms in a convenient store. As one shared that *“It’s kinda hard to buy condoms at convenience stores in Thailand. If I am asking for condoms, I might probably feel like everyone is staring at me and the cashier is judging me. In the past, I was so embarrassed, I was not confident enough to buy condoms on my own, but now, I am confident to ask for condoms at convenience stores like 7–11 store. I realize that condom protects me from HIV”*. One health care provider stated that *“In our HIV clinic, we always encourage patients to use condoms and teach them to better communicate and negotiate condom use with their sexual partners. They need to know how to say NO to have unsafe sex”*. All participants fully agreed with the statements.

Rights of access to HIV/AIDS treatment and health benefits provided to Thai

PLWH—HIV-positive Thai MSM suggested adding rights of access to HIV/AIDS treatment and health benefits provided to PLWH. They also shared different experiences regarding access to health care and HIV/AIDS treatment, both in government and private hospitals. As one explained, “*We have different rights of access to HIV/AIDS treatment...for instance, my rights is to use Social Security Scheme because this has been provided by my workplace...I don’t have other options*”. Another one shared, “*I applied for a Universal Coverage (UC) Scheme; this’s provided by the Ministry of Thai Public Health. To my knowledge, it’s a very basic one*”. All of them had the impression that they have a fair and equal opportunity to obtain HIV/AIDS treatment and health care service.

Health care providers thought that in term of rights of access to HIV/AIDS treatment, their patients (PLWH) are universally covered. As one stated, “*I think nowadays, no one (PLWH) is left behind; everyone can get access to health care service equally*”. Another one shared that “*All PLWH, including HIV-positive Thai MSM are covered by one of three healthcare schemes...Universal Coverage Scheme, Social Security Scheme, and Government or State Enterprise Officer Scheme*”.

Also, one health care provider suggested incorporating basic health care benefits that Thai PLWH are provided. She mentioned that “*When patients firstly visit our clinic, we always inform them about basic health care benefits...they need to know; it’s important. And then, they will know what they can expect as basic service and treatment for their illness*”. All health care providers agreed with this statement.

Treatment for HIV: drug regimen—During the discussion regarding treatment for HIV, participants were asked to comment on drug regimen. Health care providers and HIV-positive Thai MSM suggested that treatment for HIV infection should start with the most basic regimen which is “ART (Antiretroviral therapy)” instead of “HAART (Highly active antiretroviral therapy)”. One health care provider expressed that “*HAART is not the most basic regimen that we use here (HIV clinic); instead, the most basic regimen is ART*”. Another one supported that “*Like I say all the time, not all patients need to switch to HAART. As long as ART regimen remains effective, plus patients are fine; so, they may follow ART regimen as prescribed*”.

Also, health care providers suggested clarifying the optimal time to initiate drug regimen in HIV-infected people. One stated, “*In our clinic, we recently launched a new treatment policy. Patients always asked question like...when can I go on ART? Whenever you are ready to start on treatment; regardless of CD4 level, you qualify for ART. We name this as any CD4*”.

Gastrointestinal discomfort and anal health issues—During the discussion regarding gastrointestinal symptoms, all HIV-positive Thai MSM shared that they experienced a range of gastrointestinal discomfort (e.g., diarrhea, cramps, bloating/constipation, abdominal pain), and stomach/intestines and anal irritation/ inflammation. One indicated, “*I had diarrhea for days...it was sometimes difficult to handle it because it*

happened on and off. Another one noted that “*My main problem was bloating and constipation; I had no idea why this always happened*”.

Two health care providers shared their experiences of taking care of HIV-positive Thai MSM who had gastrointestinal discomfort. As one explained, “*We acknowledge gastrointestinal discomfort as a common problem, reported by almost all MSM patients. As such, as health care providers, we always follow up on this concern by discussing eating pattern, educating sexual health, or encouraging physical activity when more gastrointestinal discomforts are present*”. Another one supported, “*I call this clinical pattern in MSM patients as anal health issues. It happens with our MSM patients very often*”.

Social support group and spiritual support group—HIV-positive Thai MSM shared their experiences joining in various types of support groups. Some of them highlighted how significant it is to participate in support groups. *As one* described his experience, “*I attended both social support group and spiritual support group. These groups are very helpful, not only in building a social network of people with similar problems, but also as a safe place to get support, I think*”. Another one stated, “*I got many experiences of being a volunteer in both groups held by HIV clinic. Being a volunteer makes me proud of myself. At least, there is something I can do for others. If I can help people out, that would be very good*”.

Health care providers also shared their experiences of setting up and running support groups for HIV-positive Thai MSM. One explained that “*Support groups may encourage our patients to take more care of their health. Our groups usually run by trained peers along with health care providers. We focus on emotional and/or spiritual supports, sharing experiences, practical activities, and health education related to their illness*”.

Table 3 shows the summary of major findings with adaptation implications, based on feedback from HIV-positive Thai MSM and health care providers.

Feasibility—At baseline, feasibility was measured by data collected on study metrics. We completed data collection matrices on the processes of recruiting and enrolling participants. The results of our key outcomes included: (a) 100% recruitment rate of HIV-positive Thai MSM expressing interest in participation; (b) 99 % screening rate; (c) 98 % enrollment rate; and (d) time taken to recruit 40 HIV-positive Thai MSM and 8 health care providers was about 1 month.

Acceptability—FGDs with participants showed high level of acceptability. The overwhelming majority of feedback and comments from participants were positive. Both HIV-positive Thai MSM and health care providers had a positive attitude toward the HASMEP. Of the 40 HIV-positive Thai MSM participated in 4 FGs, the majority reported that they were satisfied and would be willing to continue with the program in the future, with 5 participants proposing that it should become a permanent feature of care in HIV clinic. Example of comments made included “*This program benefitted me very much.*” or that “*This program should become a permanent feature of care; or even a standard of care for people like us (HIV-positive Thai MSM)*”. Moreover, participants were receptive to the HASMEP. They also provided positive feedback with the content, materials, and activities in

modules of the HASMEP. Most of participants indicated that the content, materials, and activities were clear and interesting. They also reported that they were comfortable with different components of the modules. One HIV-positive Thai participant stated, *“I don’t mind to apply this program to my routine living. I feel comfortable with its activities and content. Overall, it’s not difficult and I can get through it. Easy reading...I think”*. Another one commented, *“I like this program...it is helpful...it covers all knowledge we need for taking care of ourselves. The activities, materials, and content are clear, fascinating, and easy to follow, and also practical”*. In a similar sentiment, another participant shared, *“This program should be accepted and continue educating us (HIV-positive Thai MSM) on how to manage symptoms”*.

Health care providers also shared the positive feedbacks. All of them said that the HASMEP is acceptable. All health care providers participated in FG stated that the program should be adopted and scaled up to other HIV outpatient clinics in Thailand. One participant stated, *“In our current standard care, the clients are not given many opportunities to think, or even develop their own plan to manage their symptoms, resulting in frustration or medication non-adherence...but this program, it is...this will help our clients to think and empower them to design their own self-care based on the content of this program”*. Another one added, *“This program is very good for self-management...it covers all content and activities necessary for our clients”*. One of health care providers made this issue clear by stating, *“The good thing in this program is that it covers almost all problems our clients have, and also...it suggests the clients how to manage those problems by themselves. The clients would be able to get better understanding of their problems; so, it is very good self-management program”*.

DISCUSSION

This study illustrates the process of using the ADAPT-ITT model to adapt the HASMEP for use with HIV-positive Thai MSM who may have problems surrounding HIV/AIDS self-management. The resulting intervention adapted for Thai context was feasible and acceptable for delivery by health care providers in HIV outpatient clinic.

Our findings suggest that participants are aware of the problem around stigma (both internal and external stigma) that was interfering with HIV status disclosure in the workplace and at home, particularly as it associates with the impact on HIV treatment, and disease progression. Hence, our intervention content will address stigma issue by providing education regarding self-management coping strategies to overcome internal and external stigma so that this will enable them to tackle stigma.

Findings from our theater test suggest changes to the stages of HIV/AIDS in order to maximize participant understanding. Our participants also identified issues that reflect concerns related to HIV knowledge, definition/description of AIDS, CD4 cell, HIV viral load, how CD4 cell counts and HIV viral load are used, and self-efficacy in condom use. Hence, in addition to maintaining key components of the HASMEP intervention, it was determined through FGs that it is crucial to add more HIV knowledge, definition/description of AIDS, CD4 cell, HIV viral load, how CD4 cell counts and HIV viral load are used, and

self-efficacy in condom use into the HASMEP content. Moreover, “WHO clinical 4 stages of HIV/AIDS” is replaced with “Three stages of HIV/AIDS (www.aids.gov)”.

HIV-positive Thai MSM and health care providers reached agreement regarding information deficit related to rights of access to HIV/AIDS treatment and health benefits provided to Thai PLWH. This may be due to the HASMEP was originally developed in African countries so that content of this issue in the HASMEP is not practical for Thai PLWH. Thus, our intervention content will include rights of access to HIV/AIDS treatment (Universal Coverage (UC) Scheme; Social Security Scheme (SSS); and Government or State Enterprise Officer Scheme) and health benefits provided to Thai PLWH.

Besides, our findings suggest changes to the treatment for HIV/drug regimen. The participants stated that treatment for HIV infection should start with the most basic regimen which is “ART” instead of “HAART”. Not all HIV-infected people need to switch to HAART. As long as ART regimen remains effective, and they live in ‘good’ health; so that they may follow ART regimen as prescribed. Consequently, we will replace definition and description of HAART with definition and description of ART. The participants also suggested addressing the optimal time to initiate ART regimen in HIV-infected people because a Thai healthcare policy for initiating ART regimen is “Any CD4” which means that whenever they are ready to start on treatment, regardless of CD4 count level, they qualify for ART. Hence, we will add this into our intervention content

Additionally, our findings require incorporating anal health issues and gastrointestinal discomfort in intervention content. Because the HASMEP was initially developed and implemented with PLWH, not specifically focused on HIV-positive MSM, we will then incorporate description and treatment of anal health issues and gastrointestinal discomfort in order to maximize a good fit of the adapted HASMEP and participant comprehension.

Although content of the HASMEP originally embraces continuing friendships and graduation ceremony, a number of HIV-positive MSM participants suggested changes. They shared their value experiences of being a volunteer in social support and spiritual support groups for HIV-positive Thai MSM. Several health care providers further elucidated experiences of setting up and running support groups (social and spiritual groups) for HIV-positive Thai MSM. All participants agreed that both social and spiritual support groups were very beneficial. HIV-positive Thai MSM indicated that by joining these groups, they were able to build a social network of people with similar problems. Hence, we will replace “continuing friendships, and graduation ceremony” with “social support group, and spiritual support group” among HIV-positive Thai MSM. In addition, we will add “engage in various activities with friends, community, and the others; and help others in need such as volunteer work” to self-management strategy that makes MSM important in community.

The current study confirmed the utility of the ADAPT-ITT model to adapt the original HASMEP for use with HIV-positive Thai MSM. In this study, the adaptation process was considerably enriched by the participants, both health care providers and HIV-positive Thai MSM, who had provided feedback/comments during the theater test FGD. All feedback/comments were very useful for program adaptation. The findings of this study showed the

evidence that our participants have a need for more information on their disease and treatment for HIV. As HIV/AIDS is transforming into a chronic disease, health care providers need to be aware that it is necessary for PLWH to better understand their disease and treatment for HIV. This may help PLWH in better understanding and adjusting themselves to long-term nature of their disease and treatment.

Some limitations exist in this study. The first one is a methodological limitation. As we sought to adapt a version of a previously successful program developed in foreign country; so, we did not examine its efficacy at improving HIV self-management, quality of life, or medical adherence. These outcomes will be investigated by the study that we are going to conduct in HIV clinic in Thailand. We will examine the impact of the adapted HASMEP on HIV self-management, quality of life, and medical adherence among HIV-positive Thai MSM. Second, our findings may be limited by its small participants. Data collection took place in one HIV outpatient clinic with 40 HIV-positive Thai MSM and 8 health care providers (nurses), which may cause bias in our findings. It is possible that there might be self-selection bias in the participants who participated in FGs. There may be the individuals within the target population who express more health conscious, engaged in HIV care, had a good relationship with healthcare providers, and satisfied with healthcare services at this HIV clinic as they volunteered to attend and respond to FG questions. Despite this possibility, we put a lot of effort to ensure that all participants had an equal opportunity to participate via the use of flyers, and flexibility in arranging of FG meetings. Also, the FG participation was independent of literacy level. Third, we also acknowledge that there may have been the limitation of the intervention in the context of structural and social risks such as stigma. For example, a number of HIV-positive Thai MSM are not willing to disclose their HIV status. Hence, some probably do not want to seek for HIV care/treatment or even attend support group and meet other HIV-positive Thai MSM. Although we emphasized the confidentiality in FGs, it is possible that our participants were hesitant to fully disclose their sensitive information in the context of the FG setting and in the HIV clinic itself. Relatedly, although we addressed internal stigma by including coping strategies as one of the modules in the intervention, but external stigma might be more difficult to address and this provider-level intervention might not be suitable to tackle external stigma. Thus, discrimination by other healthcare providers and in the community still exists. The last limitation is generalizability to population in other settings or those with different backgrounds. Because our study was only conducted in one province (Ubonratchathani), the findings may be limited in terms of external validity. Also, Ubonratchathani province is semi-rural area, the adapted HASMEP may be suitable to HIV-positive Thai MSM in semi-rural setting, rather than other geographical areas.

CONCLUSIONS

Our study provides a strong foundation for future research on HIV/AIDS self-management in HIV-positive Thai MSM. This study has the potential to fill a significant need for evidence-based, self-management interventions purposefully designed for PLWH. The development of the HASMEP using a health center-based, phased, emergent study design offers a helpful model for further research adapting evidence-based interventions for vulnerable population.

Acknowledgments

Source of support: The authors also disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: the authors wish to thank the National Institutes of Health (NIH) for funding the study (Grant # D43 TW009883 - Strengthening Nurse NCD Research and Training Capacity in Thailand). This publication resulted in part from research supported by the Center for Sexuality and Health Disparities at School of Nursing, University of Michigan.

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Table 1.

Description of existing modules of the original HASMEP

Module	Content
(1) Introductions, expectations, and course objective	Introduce the HASMEP to the participants. Expectations of the program include: (a) accept responsibility for health care; (b) trust the skills of other team members; (c) share information that pertains to your health; (d) come to appointments on time; and (e) develop a relationship with the other team members. The objective of the HASMEP was to increase participants' level of knowledge about HIV/AIDS, its treatment (medication regimen including benefits of therapy, adverse effects, scheduling of dosing, drug interactions, storage recommendations, and what to do if the dose was missed), symptom management strategies, as well as support seeking and networking.
(2) Increasing emotional capacity	Helping participants to come to terms with their HIV status; dealing with stigma; and increasing awareness of self-importance.
(3) Increasing knowledge about HIV/AIDS	Definitions of HIV and AIDS; impact of HIV on the immune system; relationship between CD4 cells and HIV; opportunistic infections; and stages of HIV/AIDS.
(4) Positive living and self-management	Positive living; self-management; components of positive living and self-management; and importance of exercise to PLWHA.
(5) Highly active Antiretroviral Therapy	Definition and description of HAART; management of medication adherence problems; and keeping immune system as strong as possible in addition to HAART.
(6) Nutrition, relationship between nutrition and HIV/AIDS	Food and water safety and sanitation for PLWHA; food groups and their importance; relationship between nutrition and HIV; importance of good nutrition for PLWHA; and reasons PLWHA become undernourished; and practice creating meals to help PLWHA.
(7) Food, water safety, and hygiene	Sanitary disposal of feces; personal hygiene; hygiene in the kitchen; and food hygiene for animal products.
(8) Self-management of anxiety, depression, forgetfulness, and insomnia	Problem, treatment, and self-care of anxiety, depression, forgetfulness, and insomnia.
(9) Self-management of constipation, diarrhea, and nausea.	Problem, treatment, and self-care of constipation, diarrhea, and nausea.
(10) Self-management of shortness of breath, dizziness, loss of strength (fatigue), and fever.	Problem, treatment, and self-care of shortness of breath, dizziness, loss of strength (fatigue), and fever.
(11) Self-management of cough, night sweats, pains, and swellings.	Problem, treatment, and self-care of cough, night sweats, pains, and swellings.
(12) Self-management of skin abscesses, blisters, and rashes.	Problem, treatment, and self-care of skin abscesses, blisters, and rashes.
(13) Weight loss (unplanned), oral thrush, genital itching, burning, and discharge.	Problem, treatment, and self-care of weight loss (unplanned), oral thrush, genital itching, burning, and discharge.
(14) Seeking social support	Continuing friendships, and graduation ceremony.

Table 2.

Using the ADAPT-ITT model to adapt the HASMEP for HIV-positive Thai MSM

Phase	Application
1. Assessment (A)	A. Assessed new target population; conducted a Facebook online survey with young Thai MSM aged 18–21 (n=469) B. Analyzed results from the Facebook online survey (Khumsaen & Stephenson, 2017)
2. Decision (D)	A. Decided to adapt the HASMEP for HIV-positive Thai MSM
3. Administration (A)	A. Administered theater tests with 48 HIV-positive Thai MSM and 8 health care providers to gather feedback on the HASMEP B. Analyzed results from the theater tests to inform next steps
4. Production (P)	A. Produced Draft 1 of the adapted HASMEP intervention by incorporating feedback from the theater tests
5. Topical expert review (T)	A. Collected additional feedback from topical experts
6. Integration (I)	A. Integrated feedback from topical experts to create Draft 2 of the adapted HASMEP B. Integrated a readability testing into Draft 2 to create Draft 3 of the adapted HASMEP C. Tailored content of Draft 3 to HIV-positive Thai MSM reading to increase comprehension of the adapted HASMEP
7. Training (T)	<i>Next steps to be completed</i> A. Will train health care providers in the HIV clinic on how to implement Draft 3 of the adapted HASMEP, recruit participants, and train research assistants to assist with data collection during the implementation of the adapted HASMEP.
8. Testing (T)	A. Will test the adapted HASMEP with 60 HIV-positive Thai MSM B. Will evaluate efficacy of the adapted HASMEP intervention in ongoing pilot randomized controlled trial.

Table 3.

Summary of focus group major findings and adaptation implications for the HASMEP

Module	Focus group findings	Implication(s) for adaptation
2	Internal and external stigma - HIV-positive Thai MSM experienced a wide range of stigma, both internal and external stigma.	Add definitions of internal- and external stigma.
	- Health care providers said that stigma does occur in all patients.	Incorporate self-management coping strategies to overcome internal and external stigma in module 2. Increasing emotional capacity.
	- HIV-positive Thai MSM clearly attributed stigma to their own sexual practices; many of them reported negative (e.g., guilt; "I got HIV because of my bad sexual behavior; <i>it is karma</i> ") feeling about living with HIV.	Add specific coping strategies to overcome internal stigma.
	- One patient stated that he was unemployed because his illness leads his employer to suspect that he was HIV-positive.	Add specific coping strategies to overcome external stigma.
3	Practical knowledge about HIV/AIDS, and self-efficacy in condom use - Health care providers said that "WHO clinical 4 stages of HIV/AIDS" are quite difficult for patients to understand entire content.	Replace "WHO clinical 4 stages of HIV/AIDS" with "Three stages of HIV/AIDS (www.aids.gov)".
	- HIV-positive Thai MSM stated that they had difficulties with distinguishing symptoms in each stage of "WHO clinical 4 stages of HIV/AIDS"	Add HIV knowledge, definition of AIDS; "What is CD4 cell?"; "What is HIV viral load?"; and "How are CD4 cell counts and HIV viral load used?".
	- Health care providers and HIV-positive Thai MSM suggested adding more HIV knowledge, and terms commonly used.	Add self-efficacy in condom use, how MSM develop self-efficacy in condom use, making condoms more accessible helps, self-efficacy is not enough, knowledge is necessary too.
4	- Health care providers and HIV-positive Thai MSM suggested raised the issue related to self-efficacy in condom use.	Add rights of access to HIV/AIDS treatment including: Universal Coverage (UC) Scheme, Social Security Scheme (SSS), and Government or State Enterprise Officer Scheme.
	Rights of access to HIV/AIDS treatment and health benefits provided to Thai PLWH - Health care providers had suggestions with respect to rights of access to HIV/AIDS treatment. - HIV-positive Thai MSM stated that they had different rights of access to HIV/AIDS treatment. - Health care providers suggested integrating basic health care benefits provided to Thai PLWH.	Incorporate and address basic health care benefits provided to Thai PLWH including: (a) Treatment with antiretroviral; (b) Treatment of hypercholesterolemia due to antiretroviral medication intake; (c) Laboratory test for monitoring treatment progress; (d) Voluntary Counselling and Testing (VCT) for HIV infection, and (e) Free condoms to prevent HIV transmission for PLWH who access to health facilities/services.
5	Treatment for HIV: drug regimen - Health care providers and HIV-positive Thai MSM suggested that treatment for HIV infection should start with the most basic regimen which is "ART" instead of "HAART".	Replace definition and description of "Highly Active Antiretroviral Therapy (HAART)" with definition and description of "Antiretroviral Therapy (ART)".
	Health care providers suggested addressing the optimal time to initiate ART regimen in HIV-infected people.	Add "When can I go on ART?", whenever you are ready to start on treatment, regardless of CD4 level (any CD4), you qualify for ART.
9	Gastrointestinal discomfort and anal health issues - Two health care providers shared experiences of taking care of HIV-positive Thai MSM who had anal health issues. - Some HIV-positive Thai MSM experienced a range of gastrointestinal discomfort (e.g., diarrhea, cramps, bloating/constipation, abdominal pain), and stomach/intestines irritation and inflammation.	Incorporate description and treatment of anal health issues, and provide participants with related information.

Module	Focus group findings	Implication(s) for adaptation
14	Social support group and spiritual support group - Health care providers shared experiences of setting up and running support groups for HIV-positive Thai MSM. - HIV-positive Thai MSM indicated that support groups (both the social and spiritual groups) were very beneficial; they were able to build a social network of people with similar problems.	Replace “continuing friendships” with “social support group” and “spiritual support group” among HIV-positive Thai <i>MSM</i> .
	- A couple of HIV-positive Thai MSM shared their experiences of being a volunteer in social support and spiritual support groups for HIV-positive Thai MSM.	Add “Engage in various activities with friends, community, and the others; and help others in need such as volunteer work” to self-management strategy that makes MSM important in community.