Determinant Contextual Factors towards Condom Use Behavior among Men Who Have Sex with Men in Bangkok, Chiang Mai, and Phuket

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Abstract

Background: HIV prevalence among men who have sex with men (MSM) is still high comparing with general population in Thailand. The utilization of information, motivation, and behavioral skill (IMB) model as a framework to design HIV preventive interventions particularly condom use in MSM population is insufficient.

Objective: This study aimed for proposing a new robust the oretical framework to explain condom use behavior among MSM in selected sites in Thailand in terms of identifying characteristics among MSM on condom use behavior and testing hypotheses regarding determinant factors influencing on condom use behavior among MSM.

Method: A cross-sectional survey was conducted during June 2014 and October 2014 to collect data using structured-questionnaire from 301 respondents living in Chiang Mai, Phuket and Bangkok more than six months and willing voluntary to answer about their sexual behavior in the past two week.

Results: 34 from 301 (15 percent) respondents reported that they did not use condom with their partners every time they have anal sexual intercourse. A path analysis demonstrated that attitude towards condom use under motivation factor was the highest predictive factor towards condom use ratio. In addition, sexual excitement towards unprotected anal sexual intercourse as mediating factor increased IMB model explanatory power.

Conclusion: Attitudes toward condom use was the highest predictive factor towards condom use ratio**.** Sexual excitement as a contextual powerful moderating factor should be added into a new robust IMB model to better predict condom use behavior among MSM population.

Keywords: Condom use, IMB, MSM

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การทดสอบตัวแปรบริบทแวดล้อมที่มีผลต่อพฤติกรรมการใช้ถุงยางอนามัยของชายที่มีเพศสัมพันธ์กับชายในจังหวัดกรุงเทพมหานคร เชียงใหม่ และภูเก็ต

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บทคัดย่อ

อัตราการแพร่ระบาดของเอชไอวีในกลุ่มชายที่มีเพศสัมพันธ์กับชายในประเทศไทย ยังคงอยู่ในอัตราที่สูงเมื่อเทียบกับกลุ่มประชากรทั่วไป แนวคิด information, motivation and behavior skill ในการออกแบบกิจกรรมสำหรับการใช้ถุงยางอนามัยสำหรับกลุ่มประชากรนี้ยังไม่เพียงพอ

วัตถุประสงค์ของการศึกษาครั้งนี้ เพื่อนำเสนอกรอบแนวคิดการอธิบายพฤติกรรมการใช้ถุงยางอนามัยโดยการทดสอบสมมุติฐานเชิงทฤษฎีที่เป็นตัวกำหนดพฤติกรรมการใช้ถุงยางอนามัยในกลุ่มตัวอย่าง

การศึกษาครั้งนี้ใช้วิธีการสำรวจแบบตัดขวาง ที่ดำเนินการสำรวจในเดือนมิถุนายนถึงเดือนตุลาคม ปี พ.ศ. 2557 โดยใช้แบบสอบถามเพื่อเก็บข้อมูลในกลุ่มตัวอย่างที่อาศัยอยู่ในเขตเมืองของกรุงเทพมหานคร เชียงใหม่ และภูเก็ต ทั้งสิ้น 301 คน

ผลการศึกษาพบว่า 15% ของกลุ่มตัวอย่างไม่ได้ใช้ถุงยางอนามัยทุกครั้งเมื่อมีเพศสัมพันธ์ทางทวารหนักกับคู่นอนในระยะสองสัปดาห์ที่ผ่านมา การวิเคราะห์เส้นทาง (path analysis) พบว่าทัศนคติต่อการใช้ถุงยางอนามัย เป็นตัวแปรที่ดีที่สุดสำหรับการคาดการณ์พฤติกรรมการใช้ถุงยางอนามัย มากไปกว่านั้น ความตื่นตัวทางเพศที่มีต่อคู่นอน สามารถเพิ่มอำนาจในการอธิบายของกรอบแนวคิด IMB ได้อย่างมีนัยสำคัญ

การศึกษาสรุปได้ว่า ความตื่นตัวทางเพศกับคู่นอนเป็นตัวแปรที่ควรเพิ่มเข้าไปในการอธิบายกรอบแนวคิด IMB ที่มีผลต่อพฤติกรรมการใช้ถุงยางอนามัยในกลุ่มประชากรตัวอย่าง

คำสำคัญ: การใช้ถุงยางอนามัย IMB ชายที่มีเพศสัมพันธ์กับชาย

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Introduction

In the late 1980s, Thailand became the first country in Asia to experience a major epidemic of the human immunodeficiency virus (HIV) infection. Due to the fact that an estimated one million Thais have been infected with HIV, of whom approximately 641,000 have died (Wimonsate, 2011), the primary focus of prevention efforts has been on reducing HIV transmission among heterosexual people and injecting drug users.

The Royal Thai government has put enormous efforts into mitigating HIV. The core components of the government's strategy include ensuring that male clients, those that visit brothel-based female sex workers, use condoms to protect themselves from HIV acquisition; providing anti-retroviral treatment (ART) widely available at facility-based hospitals for pregnant women and their infants for the prevention of mother-to-child transmission of HIV; and promoting HIV preventive awareness campaigns nationwide. As a result of these nationally-coordinated efforts, HIV prevalence, which peaked at 3.4 percent in military conscripts and 2.3 percent in antenatal care clients in the 1990s, had dropped to 0.4 percent and 0.8 percent respectively during 2006 to 2007. The number of new HIV infections per year decreased from an estimated 143,000 cases in 1991 to an estimated 14,000 cases in 2007, and the decline continues (AIDSTAR-One, 2011).

Since 2002, ART has been covered under the universal health insurance program that reimburses public and private hospitals for treatment of people living with HIV/AIDS (PLHAs) that are registered in the program (Punpanich, Ungchusak & Detels, 2004 cited in National AIDS Prevention and Alleviation Committee, 2008).

However, the success of Thailand's prevention programs does not extend to other risk groups such as men who have sex with men (MSM). Compared with the HIV prevalence among heterosexuals, the MSM population, including male sex workers (MSWs), MSM who have sex with men and women, and Transgender women have dramatically raising on HIV prevalence (National AIDS Prevention and Alleviation Committee, 2008).

The HIV prevalence among the MSM population in Thailand, particularly in big cities, has increased since 2003. In Bangkok, HIV prevalence among the MSM population was 17.3 percent in 2003, and later to 30.7 percent in 2007 (van Griensven et al., 2005). In addition, the sero-surveillance survey in Chiang Mai and Phuket pointed out that HIV prevalence among the MSM population was 17 percent and 20 percent respectively (van Grienven et al., 2010). Compared with the HIV prevalence in the adult population, which had only 0.9 percent (UNAIDS, 2013) by 2010, the Bureau of Epidemiology revealed that HIV prevalence in Bangkok, Chiang Mai, and Phuket was 31 and 7 percent respectively (Bureau of Epidemiology, Ministry of Public Health, 2010). Therefore, the Ministry of Public Health (MoPH) attempted to halt this severe circumstance.

One of challenges that Thailand has been facing is a continuous increased in HIV prevalence among the MSM population, which is one of the most difficult groups to reach. Thus, it is a difficult for health care providers to reach out to them in order to provide HIV prevention information messages and distribute condoms as they do for the general population.

In 2008, the Ministry of Public Health (MoPH), the Department of Disease Control (DDC), received a five-year grant from the Global Fund to fight AIDS, Tuberculosis and Malaria (GFATM) round eight aiming to halt the severe circumstances of HIV infection among key affected populations such as injecting drug users, female sex workers and men who have sex with men in 43 provinces. This program focused on HIV prevention among these key affected populations through working closely with non-governmental organizations and referring HIV positive people to access HIV care and treatment under the national thirty baht scheme at both private and public hospitals that were in the network of the National Health Security Office.

For MSM, MoPH, DDC, as principal recipients and non-governmental organizations serving both sub-recipients and sub-sub recipients, and the implementing agency of the GFATM round eight agreed to employ the HIV comprehensive prevention package (CPP) model as a guide for an HIV prevention framework for MSM. The HIV CPP model consists of two parts: 1) the comprehensive package of services (CPS) model and 2) enabling environment interventions.

In terms of the CPS model, it includes the following: 1) HIV prevention information distribution by outreach workers that reach MSM at bars, saunas and entertainment venues; 2) condom distribution; 3) referrals to voluntary counseling and testing at facility-based or community-based sites that provide this service; 4) referrals to sexually transmitted infections (STIs) screening and treatment.

Normally, HIV prevention intervention is based on a comprehensive package of services employed by the out-reach workers of each non-government organization at the province level as paid volunteers under the GFATM round eight reaches MSM at hotspots such as bars, saunas and public parks and initiates a discussion on HIV risk assessment and HIV prevention information, including the availability of medical services at their site. The out-reach activities include condom distribution as an HIV preventive tool and convincing MSM to get HIV counseling and testing and STI screening at facility-based hospitals or community-based organizations that are able to provide these services.

The basic assumption behind providing HIV prevention information plus condom distribution is that whenever MSM receive correct HIV prevention information, including condoms as an HIV preventive tool, they are likely to use it in order to prevent HIV infection whenever they have sexual activity. Therefore, this assumption is influenced by information-motivation-behavioral skills model (IMB).

Given the fact that the IMB model explains HIV preventive behavior, which has been influenced by the following: 1) information about how to prevent HIV; 2) the motivation to consistently engage in non-risky behavior; and 3) having behavioral skills to enact these non-risky behaviors.

The unsuccessful promotion of condom use among MSM through utilizing the IMB model by the Department of Disease Control and GFATM round eight has been reflected in the gradual increase of HIV prevalence among MSM from 2003 until the present in Bangkok, Chiang Mai and Phuket as mentioned above. This aligns with Chemnasiri et al. (2010), who studied condom use behavior among MSM, MSW and TG in Thailand in Bangkok, Chiang Mai, and Phuket. The study found that 46 percent of MSM, 34.9 percent of MSWs, and 52.3 percent of TGs reported recent inconsistent condom use. This situation could lead to an increase in HIV prevalence among the MSM population in Thailand.

Given the situation mentioned above, we can conclude that the assumption of the IMB model—providing HIV prevention information, motivating people to reduce risky behavior, distributing condoms, then assuming people would use condoms—is insufficient to explain condom use behavior among the MSM population in Thailand.

Due to the fact that HIV preventive interventions for MSM based on the IMB model are insufficient to explain condom use behavior among the MSM population, seeking a robust theoretical framework that has more explanatory power regarding the condom use behavior among the MSM population is urgently needed in order that Thailand would be able to achieve the zero goals mentioned at the Thailand NAS 2012-2016 focusing on key populations, including MSM.

Consequently, this study aims to explore the current Thailand NAS 2012-2016, including MSM, as a public health policy regarding how it has been applied and implemented in three provinces, Bangkok, Chiang Mai and Phuket, as the selected sites. In addition, this study aims to examine whether the CPS as a national HIV preventive guideline was built upon a theoretical framework and how that theoretical framework contributed to CPS model development. Finally, this study aims to propose a robust theoretical framework to better explain the condom use behavior among the MSM population in Bangkok, Chiang Mai and Phuket as three areas in Thailand with the highest prevalence of HIV. The results of this study can lead to the reshaping of HIV preventive interventions, particularly in increasing condom use behavior among the MSM population based on such theoretical framework.

Objectives of This Study

To propose a robust theoretical framework to explain condom use behavior among the MSM population in selected sites in Thailand in terms of:

• Identifying the characteristics of the MSM population regarding their condom use behavior.

• Identifying what conditions/situations influencing condom use behavior among the MSM population when they engage in sexual activity, such as sexual excitement, emotional involvement and a place to meet their partner.

Literature Review

This part begins with elaborating on how each psychological and sociological perspective explains preventive behavior. Then, how the Royal Thai Government, particularly the MoPH has responded to the HIV/AIDS situation in Thailand regarding the MSM population will be discussed. Finally, the determinant factors regarding HIV preventive behavior among the MSM population through existing research findings will be investigated in order to create a conceptual framework for this study.

Psychological Perspectives: Explaining Preventive Behavior

Psychology is both an academic and applied discipline employing the scientific method to explore mental processes and behavior. This perspective includes the study of perception, cognition, emotions, interpersonal relationships, personality and behavior of the individual in order to understand and explain how they behave. Psychology has various schools of thought that attempting to understand human behavior. One prominent to be discussed here briefly is behaviorist psychology, which states that people behave in response to environmental stimuli, meaning that environmental conditions stimulate people to respond and thus later named the stimulus-response model. Behaviorist psychology was established with the publication of Watson's classic stated that "Psychology as the Behaviorist Views I" in 1913. In this sense, this perspective is an individualistic approach, which can be applied to explain and predict human behavior, particularly from a health preventive behavior. Various models have attempted to explain this, some of which will be discussed below:

The Health Belief Model (HBM)

This model was founded in early 1950 by social psychologists in the United States Public Health area. It has been used as a conceptual framework to explain how and why people change their behavior and how they maintain their preventive behavior. The key HBM's concepts are used to explain and predict action as well as to prevent, screen for, or even control illness conditions, including susceptibility, seriousness, benefits, barriers to behavior, cues to action and self-efficacy (Rimer, 2008: 46).

The assumptions of the HBM is that if individuals are susceptible to a disease, and they believe that a condition from the disease would have potentially serious consequences, that a course of action is available to them would be beneficial in reducing either their susceptibility or the severity of the condition and that they gain more benefits than costs in taking action, they are likely to take action that they believe will reduce their risk. The HBM has been employed to study various populations in order to explain health preventive behavior on the individual level.

The AIDS Risk Reduction Model (ARRM)

This model focuses on behavioral change. According to this model, change is a process that the individual must to go through and different factors affect the movement through different stages of the process (Fisher & Fisher, 2000). This model emphasizes the stage of change and focuses on the behavioral changes at each stage that have meaningful outcomes, implying that short-term outcomes at each stage of change are the main focus of this model, while change in actual overt behavior is not emphasized.

Given this point of view, this model has been differentiated from others in terms of what outcomes are looked for Catania et al. (cited in Fisher & Fisher, 2000) elaborated on the ARRM in terms of stages of change and stated that the ARRM is applicable to sexually active or injecting-drug-using individuals with a nonzero risk of HIV. According to the authors the ARRM consists of three stages of change that individuals must go through. First, an individual must label his or her action as risky in terms of contracting HIV. Second, he or she must make a commitment to reduce HIV-risky behavior through increasing safe sex. Third, the individual must seek or enact strategies to attain HIV-risk-behavioral change.

The Transthoretical Model (TM)

Like the ARRM, the TM also focuses on the dynamics or processes of behavior rather than static behavioral change. Both models assert that change is not linear. During the changing process, it might have a moving back and forth or a recycling of behavioral change (Fisher & Fisher, 2000).

There are six stages for those who want to change their behavior. The first stage is pre-contemplation, referring to those people that do not intend to change their behavior; the second stage, contemplation, refers to those people that intend to change their behavior within the next six months; the third stage preparation, in which people intend to take effective action to change in the next month. Usually having a plan for action the next time. The fourth is the action stage, in which people have to meet some criteria for efficacy for up to six month, and the behavioral changes made during this stage are highly visible to others. The maintenance stage is the fifth. For HIV prevention, for example, people at this stage need to practices safer sexual behavior for more than six months. The final stage, termination, it is assumed that people are no longer tempted to relapse and have a complete sense of self-efficacy concerning their ability to maintain healthy behavior.

The Social Cognition Theory (SCT)

To change an individual's behavior, SCT emphasizes the importance of the social and self-regulation skills and self-behavioral skills for practicing safer sex. Fisher and Fisher (2000) maintained that even though an individual might have posses social and self-regulation skills, he or she needs to belief in their self-efficacy, in practicing safe sex. Self-efficacy, therefore, is a moderating relationship between social and self-regulation skills and the save sex on the part of each individual. In addition, SCT includes the social factors that affect an individual's behavior such as social and self-regulation skills in the model, which is substantially different from other models reviewed above.

Following Fisher and Fisher (2000)'s elaboration, it was shown that strong inter-correlations existed among explanatory variables, namely, the safer behavioral practice was predicted by self-efficacy itself and through motivation. In addition, self-efficacy itself also was predicted by having related information on safer behavioral practice, self-regulation, and risk reduction skills. In the meantime, risk-reduction skills were associated with self-regulation in determining self-efficacy. Finally, self-regulation was predicted by social support and social norms of the group.

Theory of Reasoned Action (TRA)

The TRA has been applied to study various health areas, particularly regarding HIV preventive behavior. This theory has been well tested with empirical data at the ground level in order to determine HIV preventive behavior. Fishbein proposed that this theory was based on relationships among attitudes, intention and behavior.

Regarding HIV preventive behavior, Fisher and Fisher (2000) elaborated on the relationships among attitudes, intention and behavior and suggested that HIV preventive behavior is predicted by an individual's intention, which in turn, is predicted by an individual's attitudes and subjective norms. However, in light of the development of this theory, Rimer (2008) proposed that attitude, which is able to predict behavioral change, needs to be emphasized in terms of attitudes toward behavior, for example, one's attitude towards mammography rather than one's attitude towards the object, cancer. In addition, Fisher and Fisher (2000) made it clear about the determinant factors affecting the attitude towards HIV preventive behavior, stating that this attitude is a function of beliefs about the consequences of performing the act multiplied by the evaluation of such consequences.

The Theory of Planned Behavior (TPB)

Given the limitations of the theory of reasoned action, as it focuses only on attitude, subjective norms, and intention to determine behavior, which are insufficient to explain an individual's behavior, the TPB is an extension of the TRA by adding perceived behavior control to the TRA model, taking into account situations where one may not have complete volitional

control over a behavior, such as sexual arousal, gender-based power differentiation and alcohol and drug use.

According to Rimer (2008) elaboration, the TPB postulates that perceived control is an independent determinant of behavioral intention, along with attitude towards the behavior and subjective norms. Perceived control reflects an individual's beliefs and assessment of the ease or difficulty of performing (Fisher & Fisher, 2000).

The Information-Motivation-Behavioral Skills Model (IMB)

The IMB model was developed by Jeffery D. Fisher and his colleagues in 1992. The principle of this model consists of three core components, namely, information, motivation and behavioral skills, which may be useful in determining HIV preventive behavior in various populations.

The assumption of the IMB is that when an individual is well-informed, motivated to act and having appropriate behavioral skills, then they would be likely to initiate and maintain the pattern of HIV preventive behavior. According the model, Fisher et al. (1999) stated that the information that is relevant to HIV preventive practices is a prerequisite for determining HIV preventive behavior. On the other hand, the motivation to practice preventive acts, based on attitudes and social norms concerning these preventive acts, are the second basic determinant of HIV prevention behavior. Finally, behavioral skills, including the objectives in performing preventive acts, are the third determinant of HIV preventive behavior. Ferry et al. demonstrated the information-motivation-behavioral skills model of health behavior as shown below:

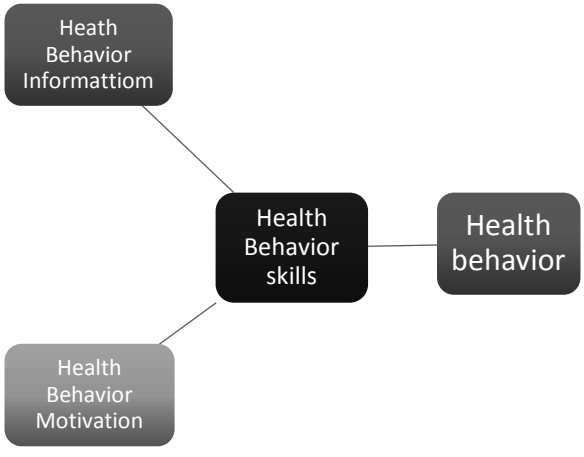

Figure 1. Information Motivation and Behavior Skill Model.

The IMB model has been employed to explain HIV preventive behavior among various populations. For instance, Zhang et al. (2011) utilized the IMB model to predict consistent condom use among female sex workers (FSWs) in Jinan, China with a satisfactory conclusions. Social reference support, experience with and attitudes toward condoms as motivation constructs, self-efficacy and health behavior and condom use skills as behavioral skills are the determinant factors in HIV preventive behavior of FSWs.

Another study was conducted by Cornman et al. (2007) in order to support the utility of IMB model. This study attempted to explore the effectiveness of the IMB model by collecting data from truck drivers in India. 250 males participated in this study. The finding showed that there was an effect of the IMB intervention on attitudes, norms, behavioral skills and intention specific to condom use with marital partners but no effects in the constructs related to non-marital partners.

Another utilization of the IMB model predicting sexual risk behavior among ethnically-diverse young men who have sex with men aged 14-21 years was conducted by Fisher (2011) and investigated how fit the IMB model was in terms of predicting sexual risk among the sample. The results showed that the fit of this model was acceptable for most indicators for primary and secondary risk.

The IMB model has been developing since 1992 and is being tested with various health areas, including HIV preventive behavior and populations. However, Fisher and Fisher (2000) pointed out that, at the conceptual level, the role of information constructs under the IMB model seems to be inconsistent across studies compared with motivation and behavior skills, which are more consistent in predicting HIV preventive behavior. In addition, that the relationship between information and motivation was inconsistent.

Self-Efficacy

Following suggestions above, self-efficacy as one of the determinant factors explaining the percent of condom use behavior among the MSM population was investigated. This suggestion aligns with what Fisher and Fisher (2000) found in reviewing research papers. They concluded that self-efficacy was significantly associated with HIV preventive behavior.

According to Fisher and Fisher (2000), stated that self-efficacy means

> *"the perception that one can perform preventive health successfully and experience expected positive outcomes. It also means that self-efficacy is related to both perceived successful performance and the actual experience of the performance"*

This meaning of self-efficacy has been successfully applied in a number of studies. i.e., Zhang et al. (2011) as cited earlier. Another study of unprotected anal intercourse among immigrant Latino MSM on the characteristics of the person and the sexual encounter conducted by Zea et al. (2009) revealed that the personal characteristic of self-efficacy in relation to safe sex was negatively associated with unprotected anal intercourse over the previous three months, at the most recent encounter, and over multiple encounters reported by each participant.

Perceived Costs and Benefits of Condom Use

Perceived costs of condom use was mentioned on the HBM. In this model there are three key components, which include perceived susceptibility, perceived severity, and perceived vulnerability. Fisher and Fisher (2000) stated that individual health outcomes could be evaluated from the point of view of individual perceived costs and benefits in performing preventive behavioral practices. On one hand, individual benefits include beliefs about the effectiveness of available options in order to reduce the threat from disease. Individual costs in performing preventive behavioral practices involve any potential negative aspect of a particular preventive behavioral practice. Even if an individual feels vulnerable to disease infection, changing preventive behavioral practices is based on a comparison between perceived costs and benefits that they are favorable.

Perceived costs and benefits of condom use, therefore, are two determinant factors that explain HIV preventive behavior that need to be tested.

In concluding section of the "Theoretical Approaches to individual-level change in HIV risk behavior." Fisher and Fisher (2000) also discussed the idea that the relationship between perceived costs and self-efficacy constructs have been much more consistent on its relationship. Wulfert, Wan and Backus found that whenever perceived barrier (cost) increased, condom use decreased. Further, barriers such as the reduction of sensation and pleasure were associated with condom use, as well as worry about negative reactions from sexual partners.

Contextual/Situation Factors

There are contextual factors that play a significant role as moderating factors affecting the ratio of condom use. In this study, these factors were explored and incorporated into the model being tested.

Sexual Excitement

The study entitled "Behavior and cognitive barrier to safer sex between men in steady relationships: Implications for prevention strategies" conducted by Davidovich, de Wit and Stroebe. (2004) found that high scores on anticipated sexual excitement regarding unprotected anal intercourse was associated with more risky, unprotected, anal intercourse.

Intimacy

This concept plays a critical role in determining condom use among the MSM population. In general, whenever we have strong intimacy with someone, we are likely to follow any belief of that person. Likewise, regarding the condom use behavior among the MSM population, the feeling of intimacy is a determining factor in condom use. McLean et al. (1994) concluded that gay men were more likely to be emotionally involved in regular partner and to perceive unprotected penetrative sex with a regular partner as not risky.

Behavioral Settings

The environmental setting has an influence on an individual's decision making in terms of protecting himself from HIV acquisition by using a condom. Latkin and Knowlton (2006) explained that attendance in certain settings, e.g., bars, shooting galleries, brothels, bathhouses or public transportation stations, are associated with higher HIV risk. This implies that settings where MSM meet their partner have an influence on their decision-making in terms of protecting themselves from HIV acquisition.

The study of the sexual behavioral and risk factors for HIV infection among homosexual and bisexual men in Thailand conducted by Li et al. (2009) concluded that although bisexual men venue based selling sex reported a higher rate of behaviors commonly associated with HIV transmission risk, including drug use and frequent partners change, HIV prevalence among bisexual men venue based selling sex was nearly three times lower than among the general MSM population. One of the rationales behind this phenomenon is that bisexual men who sell sex at venue based are perceived as high-risk persons; therefore, clients are willing to protect themselves by using condoms when they have sexual activity with bisexual men who sell sex at venue based, while bisexual men who sell sex at venue based are also concerned about their HIV risky behavior.

Demographic Data

Age

Many research studies have suggested that age is associated with condom use. Mansergh et al. (2006) concluded that slightly older age individuals (25-29 years) versus younger individuals (18-24 years) were associated with more consistent condom use. Frist et al. (2009) concluded that the estimated HIV incidence among young MSM increased from 4.1 percent in 2003 to 6.4 percent in 2005 and then to 7.7 percent in 2007. This implied that age is a determinant of condom use among the MSM population.

Education and Income

Zea et al. (2009) collected data from Latino MSM and concluded that the demographic factors of education and income were associated with sexual risk.

According to the literature reviewed throughout this section, it was found that even the IMB model has been able to explain condom use among the MSM population, the IMB model as HIV preventive framework mentioned under Thailand NAS 2012-2016 was an incomprehensive model to explain preventive behavior among the MSM population in Thailand. Because the HIV prevalence among the MSM population has gradually been increasing in major cities particularly Bangkok, Chiang Mai and Phuket. The advantage of this study was that it attempted to identify the theoretical gaps that needed to be filled in order to increase the power of explanation of condom use in the MSM population.

Rather than explaining condom use behavior in the MSM population through the IMB model as a psychological explanation, contextual or situational factors as sociological explanations such as behavioral settings, intimacy and sexual excitement leading to unprotected anal sexual intercourse were added to this model in order to increase the explanatory power of the IMB model. Furthermore, the concept of the costs and benefits of condom use for MSM was also added to the conceptual model to test whether it could increase the power of explanation along with the sociological factors. Figure 2 presented a conceptual framework of the study.

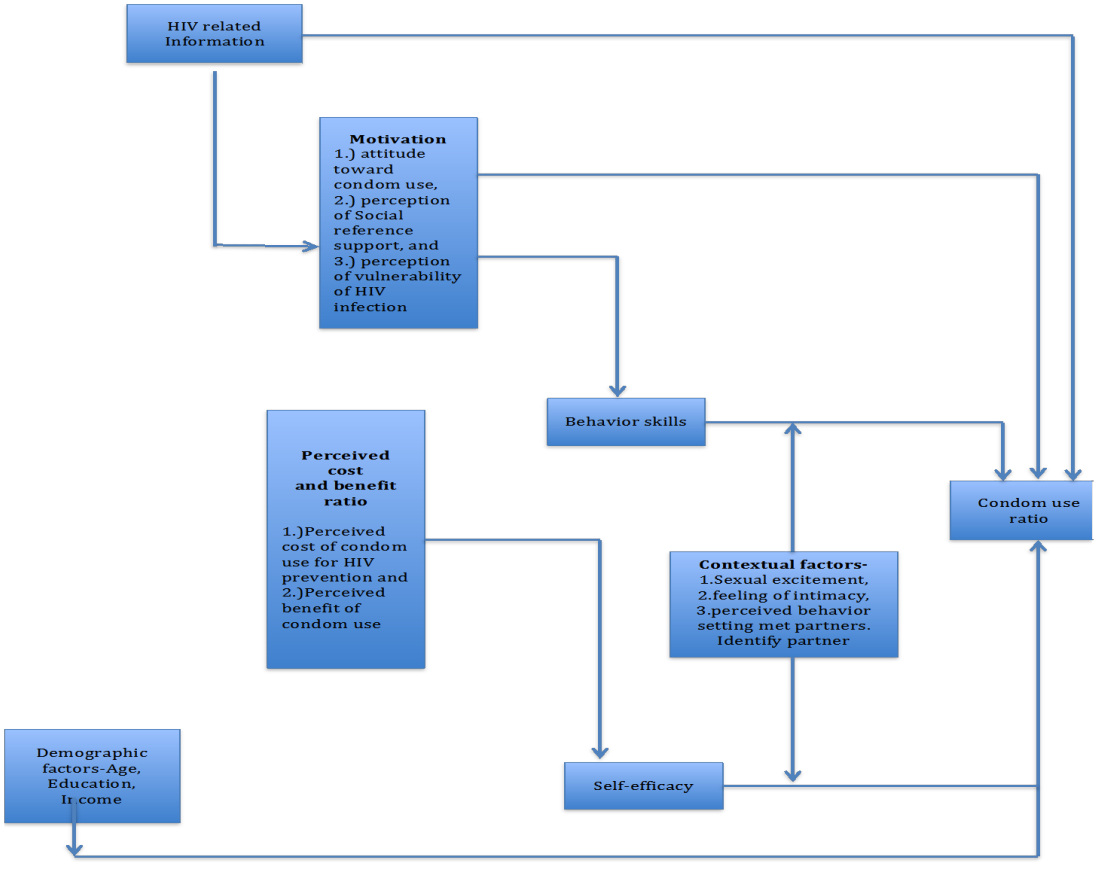

Figure 2. Conceptual Framework.

Method

The population of this study included men who have sex with men who have been in Bangkok, Chiang Mai and Phuket provinces more than six months. A cross sectional survey was conducted during June to October 2014. In terms of sampling, firstly, we employed purposive sampling method to identify areas that would be used to collect data. In Bangkok we collected data from those who have lived in 52 areas. While, in Chiang Mai and Phuket, we collected data from those who have lived in Muang district. There were several reasons for selecting Muang district for data collection include. Firstly, Muang district was located for universities, colleges, central business districts where MSM were gathering in these areas for reasons such as studying, working, and living. Secondly, Muang district was a high density area for MSM and thus more convenient to access them than other districts at provincial level. In addition, we employed purposive sampling to select sample from each area based on criteria as follows:

Identifying themselves as men who have sex with men, living in Bangkok, Chiang Mai and Phuket provinces more than six months before this study, and being voluntary to participate in this study.

The structured-questionnaires were used to collect data from those who fit with our criteria. In order to increase ability to reach out MSM, this study employed two channels were employed; first, the web-based link was employed. This web-based link was distributed to MSM networks and MSM community based organization in each province. The second channel was a paper-based questionnaire for those who did not receive the web-based link questionnaire. Altogether 301 questionnaires for this study were received.

In terms of explaining condom behavior in MSM population, the study employed SPSS version 19 to analyze data and create statistic tables for presentation data. While AMOS program version 21 was used for path analysis to predict the relationship between independent and dependent variables.

Results

In terms of demographic data of respondents, most of respondents were between 26 up and below 21 years of age, completed below bachelor degree and were employed approximate average monthly income of with 11,301 baht. Most of respondents were single; however, for those MSM who identified themselves not being single, majority of respondents mentioned that they had relationship with their partner more than two months. In addition, most of respondents have quite equal sexual preference roles that included either active or passive roles.

Most of respondents received free condom from various sources, i.e., peer educator or volunteer outreach worker or others condom outlet settings. Majority felt confident accessing on condom whenever they needed. In addition, condom prices were not a barrier to access.

In terms of engaging with an anal sexual intercourse, most of respondents were engaged on an anal sexual intercourse activity within the last three months. In detailed information, most of them were engaged on anal sexual intercourse approximately three to four times in the last two weeks, and most of them used condom at least one piece with their partners during that period.

However, the analysis of condom use ratio with their partners within the last two weeks showed that approximately 15 percent still did not use condom with their partners.

Majority of respondents had well-enough HIV related information since the three provinces under study have been exposed with HIV interventions for quite a long time. In fact, previous interventions also focused on providing basic HIV related information to MSM. However, there was a misunderstanding on HIV related information namely, "Vaseline or baby oil should never be used with condoms."

Given a long time exposure with HIV interventions, majority of respondents had positive attitudes towards condom use but they were not sure whether they were vulnerable to HIV infection. In terms of behavioral skill, most respondents felt easy to perform proper acts to protect themselves from HIV acquisition.

Regarding perceived cost of condom use for HIV prevention, most of respondents placed themselves in the middle of the degree of three statements such as using condom reduces their sexual pleasure. The implication is that they might not use condom every time whenever they have opportunity to avoid it, since they thought condom use as preventive tools cost them both money and sexual pleasure. Consequently, this led to having a low condom use ratio and was definitely able to increase the risk of transmitting HIV virus to their partners.

Given the perceived benefits of condom use, MSM had high score on perceived on benefits of condom use. Meanwhile, most of respondents have a middle score on perceived costs of condom use that may reduce their sexual pleasure and might bring trouble when they want to use it with their partners. The comparison of perceived costs and benefits of condom use among MSM may affect a decision making on whether they want to use a condom with their partner.

In addition, the concept of self-efficacy supported the idea that MSM are able to decide what they want or do not want to do in terms of having sex with their partners. What we found that comparing costs and benefits of condom among MSM may affect their decisions to use it.

Likewise with general population couple, whenever one MSM identifies his current partner as a regular one mostly around two months. Then, the condom use between both of them may be dropped out in order to avoid a trouble from un-trusted relationships between both of them and to increase sexual pleasure between them. This situation coincided with the

fact that 15 percent of respondents still had low condom use ratio with their partners. This kind of situation led to increasing a higher probability of getting HIV infection and, a consequence, contributing to increasing HIV prevalence in MSM significantly.

In terms of contextual factor affecting condom use ratio, the study found that respondents had a tendency towards having unprotected anal sexual intercourse due to high emotional involvement towards their latest partners that they have sexual relationships. These two factors led for dropping out using a condom in MSM.

In current situation, MSM met their latest partners through internet/website and even educational settings where they study which was a totally difference scenario in the past where they met each other at bars, saunas and public parks.

Finally, according to the recursive path diagram model, it showed that attitude towards condom use as one of three key concepts under the motivation factor is the highest antecedence towards condom use ratio, followed by sexual excitement towards unprotected anal sexual intercourse and having a perceived social support (PSS), which has an equal power of explanation; however, PSS has a negative relationship with condom use ratio. The figure 3 below presented the recursive path diagram.

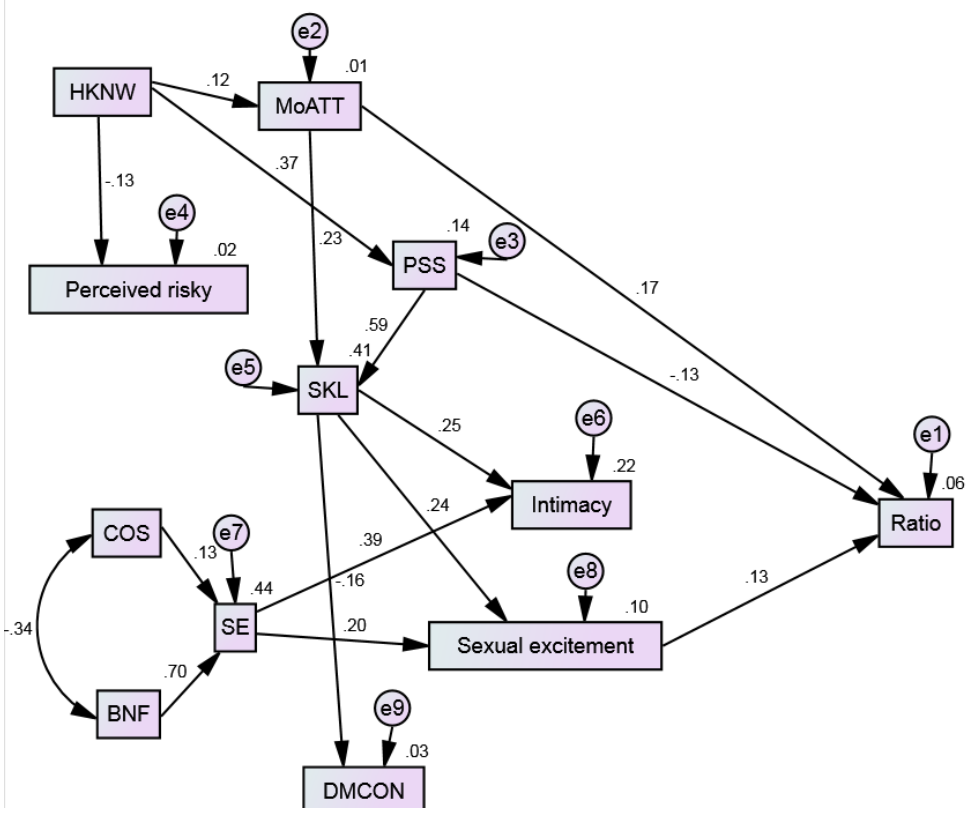

Figure 3. Recursive Path Diagram: Predictor of Condom Use Ratio.

In terms of perceived costs and benefits of condom use, both of them did not have a power of explanation directly towards condom use ratio, rather than through self- efficacy and sexual excitement as contextual factors.

Conclusion and Discussion

In terms of predicting condom use ratio, the result showed that if we could increase positive attitude towards condom use in MSM, it could increase condom use ratio in MSM population. This contributes to reduction of new HIV infected person across country.

Given the result, we concluded that the information, motivation and behavioral skill model has strong power of explanation on condom use ratio in MSM population in the selected provinces under this study.

In addition, this study attempted to explore whether perceived costs and benefits of condom use had affected the condom use ratio. The result showed that MSM did not concern much on costs and benefits of condom use affecting condom use ratio. However, those MSM who perceived benefits of condom use were more likely to have high condom use ratio due to high score on self-efficacy and low score on sexual excitement. This finding supported the rational choice assumption that people will act something whenever they think those actions could bring benefits back to them.

It was also interesting in that contextual/situation factors particularly sexual excitement in MSM population could determine the condom use ratio significantly. Given that result, we also found that MSM who have low scores on sexual excitement were more likely to have high condom use ratio. This finding aligned with the concept that contextual factors play a critical role as moderating factor affecting condom use ratio.

Another important finding of this study was that MSM who have perceived having a social support whenever they need had a negative effect associated with condom use ratio. The implication was that MSM in this study perceived that whether or not they are doing a wrong thing that is deviated from expected social norm i.e., not to use condom, they still a social support. Therefore, condom use ratio for those MSM who perceived having a social support had a negative association relationship under this study.

We finally concluded that the information, motivation and behavioral skill model pointed out the positive attitude toward condom use can effectively explain a condom use ratio in MSM of the selected three provinces under this study. Given the result of this study, sexual excitement as one of contextual factors was the strongest determinant factor toward condom use ratio; therefore, it should be taken into the model to increase the power of explanation of the IMB model.

Recommendations

Given the results from this study, a number of recommendations may be made regarding policy implications and improving methodology for further study.

Policy Implication

Information, motivation and behavioral skill model as framework of the comprehensive package of services has been proved that it still has power of explanation to predict a condom use ratio in MSM population. Rather than focusing on HIV related information and behavioral skills as previously practiced, the new intervention needs to be emphasized on increasing a positive attitude towards condom use as one of key critical factors of motivation concepts that was the highest antecedence towards condom use ratio.

In addition, sexual excitement was the second strongest determining factor towards predicting a condom use ratio in MSM, it should be taken into consideration whenever new designs or interventions are initiated.

Methodology

Since this study heavily relied on quantitative dominated analysis over the qualitative method, it would have provided one side of the coin of condom use ratio in MSM phenomenon, particularly identifying determinant factors that have influenced toward condom use ratio. Therefore, further study in the process of behavioral change of MSM on condom use employing qualitative study would also be beneficial towards an in-depth and comprehensive a comprehensive understanding of condom use phenomenon in terms of as well as *"How"* MSM might change their behavior regarding condom use in particular situations.

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