

Original Article

Analysis of “The Pilot Study of Promoting MSM to Use Condoms in Special Settings in 2011”

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Abstract

The main route of transmitting HIV was through unsafe sexual behavior, and it accounted for 89.3% of the infected persons (homosexual 71.9%) in Taiwan in 2011.

The Light of Friendship Association in Taiwan commissioned by the Taiwan Centers for Disease Control (TCDC) employed the concept of liquor sales representatives-developing the project “Sex Police” to promote safe sex at commercial bathhouses for men to have sex with other men. An intervention was executed from August to December, 2011. A staff at the gay sauna was dressed up as a “Sex Police” to distribute condoms, provide safe sex consultation, and assist customers who overdose on recreational drugs to leave the venue. Moreover, they randomly selected the customers to fill out the questionnaires, and 410 subjects were eventually included.

The results showed: 1) 97.6% of the subjects claimed that they would accept the service provided by the Sex Police. The Sex Police project increased condom use by at least 46%. 2) In logistic regression analysis, “Anal sex with multiple persons without changing condoms”, “Sometimes have sex with more than 1 sexual partners in a party”, “Do not take proactive actions when having sex with someone who does not use a condom” were the risk factors of unprotected anal sex. 3) The estimated number of people infected by HIV was 19 out of its 80,000 annual visitors at gay saunas. If the condom use can be increased up to 90% or higher through the implementation of the Sex Police project, the number of HIV infected people in the sauna is expected to decline from 19 to 3. Moreover, the medical care costs can be reduced by 4.8 million dollars every year, saving an average of 1.5 billion over 30 years.

The results showed that the “Sex Police” project increased condom use at gay saunas. TCDC advocates the “Healthy, Safe and Friendly Shops” logo identification plan, and hopes

local health bureaus, NGO (non-governmental organization) and gay sauna operators can co-operate to promote condom use in order to prevent the spread of HIV.

Keywords: MSM, unprotected anal sex, sex police, condom

Background

In the year of 2011, the number of AIDS infected people transmitted by unsafe sexual behavior accounted for 89.3% of all infected cases, in which 17.4% of them were via unsafe heterosexual behaviors, and 71.9% of them were via unsafe homosexual behaviors. Hence, a propaganda and dissemination of the concept of safe sex must be implemented. A study by Ko *et al.*, indicated that 35.7% of people in a sauna who did not use a condom during an intercourse was they did not bring condoms with them [1]. Thus, not only offer health education but also increase the accessibility of condoms, are the targets that the government should have to head for.

In 2011, the guidelines for prevention and treatment of AIDS released by WHO mentioned that innovative health education strategies, *e.g.*, using the internet to disseminate the information and to develop different interventions in different places were essential to prevent the transmission of AIDS [2]. Compared with other places of having sex, homosexual saunas have much higher chance for people to have sexual behaviors [3]. Researches focusing on the implementation of intervention of health education in the place of having an intercourse, *e.g.*, 'The 100% condom program' conducted in Thailand and the dissemination of condoms in special settings by many countries, showed that the condom usage increased significantly [1,4-6].

In Taiwan, the tenth article of The Regulation of Prevention of Human Acquired Immunodeficiency Infection and Protection Rights of Infected People stipulates that hotels and saunas should provide condoms and aqua K-Y lotion for their customers to use. If these business settings broke the law, they will be fined three to ten thousand New Taiwan dollars [7]. It only restricts hotels and saunas to follow the rules but other settings, such as public toilets, theaters, and eight kinds of sex-related industries, have become the blind spots of preventing AIDS. Generally, the main intervention is conducted by a local health bureau, which uses lectures of sexual transmission disease prevention to promote safe sex of using a condom.

However, two problems have emerged since the Regulation was enacted in 2007. The problems about executive are the Regulation does not mention the price of the condom should be free or not and where the supplying points must be placed in a special area in the business place [8]. Hence, the most convenient and easiest way to provide condoms for those business managers is to provide condoms at counters. Thus the condoms are limited accessible because of two reasons. Firstly, consumers are not happy to ask condoms from counters. Secondly, the points of providing condoms is inconsistent with the places where sexual behaviors actually happen [4].

Generally speaking, homosexual, who usually have higher risk of having unsafe intercourse, may have more pressure compared with the ordinary people because the society still treats homosexual not equal. Hence, especially when they are unhappy or get bad mood, they usually drink alcohol more or take some drugs to get relief [2-3,9-11]. Consequently, their psychical condition may be influenced by drugs or spirits. Then, they may feel it is difficult to wear condoms when they are going to have intercourse. In the special settings such as saunas, homosexual often have group sexual behaviors because of the special atmosphere of the environment [12]. This is a problem of preventing AIDS transmission. The truth points out that it is important to adopt some regulations to stipulate these special places to provide condoms and K-Y lotion. However, in generally, for mostly customers, the passive service is not able to help them wear a condom voluntarily during an intercourse.

The pilot project of promoting MSM to use condoms in special settings in 2011

In order to increase the rate of condom usage by homosexual, the TCDC authorized the Light of Friendship Association of Taiwan to develop a new and innovative project – “The pilot project of promoting MSM to use condoms in special settings in 2011”. The project adopted a method, which is similar to the method that the alcohol company has used – “lady of promoting alcohol drinks” and the term is called “Sex Police”. The project requires the sex police to actively send condoms to the users who will or are having sexual behaviors, to give a lecture of health instruction directly, and to manage special activities in saunas. Moreover, the sex police needs to instruct health education at the right moment in the settings and to provide the customers, who already have taken overdosed on drugs with some protective interventions to reduce the unsafe intercourse. During the parties, the Light of Friendship Association also asked some customers to fill a questionnaire in order to understand homosexual’s feeling about this project. The association chose every Wednesday and Saturday to adopt the intervention, eight hours per time because the sauna business managers stated that customers were happier to come at these periods. The areas where the intervention is implemented were the rest rooms bathroom areas, the dark room areas, the gym areas and the comfortable sleeping areas. The staffs, who acted as the sex policemen, went to the place, where the sexual behaviors could happen, to distribute condoms, to provide safer sexual consultation and to assist overdosed customers.

The sex police employ both active and passive methods. Active methods include inspection of the settings, distribute the condoms and K-Y lotion in settings where sexual behavior could happen and reminding consumers who are going to have sex to use condoms by waving love hands. Moreover, the sex police may need to help the customers “to tear the condom off” and “put the condom on”. Passive methods include that to help customers, who are in the saunas, can find the sex police immediately and ask for the condoms or

consultation. Table 1 below explains the patterns and methods of the sex police.

During the period of executing the project “Sex Police”, in total 410 respondents were recorded. All of them are male and aged between 31 and 40 mainly. Regard to the issue of the number of sexual partners, the major group, 29.8% (122 persons) had multiple sexual partners, and 3.7% of them had one fixed sexual partner. Over 90% of the respondents said that they had anal and oral sex. 87 persons said that they had sexual behavior with 3 or more than 3 persons. The number of ESPA (having drugs and intercourses in a party) was 40 persons. The average number of sexual partners in a party was 1.9 persons. The average number of condoms used in a party was 3.3 pieces. 91.5% of the respondents clicked “satisfied” or “very satisfied” for the question of having the service supported by the sex police. Four hundred people (97.6%) claimed that they would accept the service of delivering condoms actively by the sex police. Regard to the issue about their feeling when they see the sex police, more than 100 persons explained that their feeling included “interesting”, “practical”, “considerable”, and “very charming”. The results showed that customers have positive and non-rejected attitude to the sex police.

A trial study was performed to understand the number of condom usage before and after the intervention in one party. The results showed that no matter what kind of party patterns, the rate of condom usage increased at least by 46%, after the intervention.

Table 1. The types of parties where the sex police involve in and the methods which the sex police use

Party pattern	The methods of going on duty
Wednesday night	Regularly inspect in settings; offering safe sex consultation and sending condoms.
Hard party: place - active pool full with K-Y lotion in a dark room. The consumers hold activities nakedly.	Because the settings are dark, wet, slippery and crowded, the managers of the business should choose a tall person, who can climb up or bore, to use a red light baton or a pointer to indicate where the condoms are. The condoms can be hanged in an iron bucket or the sex police can go to the field, where the sexual behavior is happening, to distribute condoms.
Bubble spa party: Spray a lot of fragrant bubble from the top of the bath area.	The business manager should choose a tall person who can climb up or bore to distribute condoms actively or passively.
Powerful party: Consumers have to be naked but masks are put on; only eyes and a mouth are seen. Usually the place is full of light.	Boxes of condoms and K-Y lotion on the wall of the field must be set. The sex police must intersperse the show. After the interspersion, they must walk around the setting to make sure people are going to have safe sexual behaviors.

Table 2. The number of condom usage prior and post the intervention of the sex police

Activity theme	Number of condom usage before the intervention	Number of condom usage after the intervention	Increase rate (%)*
Wednesday night	256	374	46.09%
Hard party	338	514	52.07%
Bubble bath party	127	367	188.98%
Powerful party	190	459	141.58%

*The increase rate of usage was calculated as (the number of condoms used after intervention - the number of condoms used before the intervention)/ the number of condoms used before the intervention

Statistical analysis

The logistic regression model was used to analyze the difference between the people who wear condoms of 100% and of not 100% during anal sex.

A. Data variables

1. Wearing condoms of 100% during anal sex

Respondents who marked “yes” at the question “Do you wear condom every time during anal sex” was defined as “wearing condoms of 100% during anal sex”. The other options included “almost use condoms every time”, “use condom often”, “doesn’t use it with fixed partners but use a condom with an unfamiliar sexual partner”, “I don’t play anal sex”, “I am not sure I have used condoms or not” and “I never use condoms”. Except the option of “wearing condoms of 100% during anal sex”, the other options were relocated into a new group of “use condoms less than 100%”.

2. The questions of “The average number of using condoms in a party” and “The average sexual partners in a party”

The answers of the questions are classified as category variables. This study transformed the answers into discrete continuous variables. If the respondents clicked the option of 5-10, then the average score in this example was 7.5.

3. The reasons for not wearing condoms during intercourse.

There are a lot of excuses for people not to wear condom during anal sex. Hence, the study summarized the answers and divided these answers into some categories, which are: 1) the factor attributed to personal reasons, *i.e.*, they don’t like to wear condoms; they harmonize with their partners; their penis would be too soft to put the condoms on so they don’t use it; I cannot see so I do not know my partner has worn or not; depends on my feeling; I like the partner too much, so I do not wear; I love the partner, so I do not wear. 2) the factor attributed to condom reasons, which are “we don’t have condoms at this moment”; “condoms had been run out”; “the condoms are broken so we don’t have anyone left”; “unexpected occurrence (I do not expect I will have an anal sex)”; “have taken drugs and then I am too exciting to care about the issue”; “I already have a regular partner”, *i.e.*, boyfriend, regular partner, fixed husband, and familiar persons.

4. Did you do any positive intervention when you meet somebody who does not wear a condom during anal sex?

The answers of the positive responses of meeting a partner, who is going to have anal sex with condom-free are “change the partner immediately”, “to get a condom immediately”, and “to ask a condom from others”. The answers of having not adopted any positive intervention such as “change to other intercourse method”, “whether wearing a condom depends on the sexual partner(s)”, and “no matter what happened, just do it!”

B. The equation of logistic regression

The dependent variable is “whether wearing condoms of 100% or not during anal sex”. When the respondents marked “use every time” at the question “Do you wear a condom during anal sex every time?” was categorized in the group of “wearing a condom of 100%”. The other options were categorized into the category of “wearing condoms not 100%”. Because the logistic regression is sensitive to co-linearity, it is necessary to check the correlation between all variables first. Hence, the authors found that “the number of wearing condoms in a party” is significant associated with “the number of sexual partners in a party”. Hence, the independent variable only include ”the number of condom usage in a party”

In addition, independent variables include age, having a fixed sexual partner, change a condom when have multiple partners, having more than one partner in a party, the number of condoms used in a party, any positive response during anal sex with a partner who do not want to wear a condom, factors attributed to the human factor, drugs, or regular sexual partner and then condom was use-free, the frequencies of taking drugs.

Then, the significant variables include 1) change condoms if I will have multiple partners, 2) sometimes have sex with more than 1 sexual partners in a party, 3) will take proactive actions when having sex with someone who does not use a condom, 4) will wear a condom during anal sex except when having sex with regular sexual partner(s) (Table 3). The odds ratio (OR) of the group of changing condoms during anal sex with multiple partners compared with the group of having anal sex without changing condoms was 2.54. The attributed

Table 3. The logistic regression model using the variables of wearing a condom to have anal sex (N=410, 2 missing)

Variables	Odd ratios	95% CI	
		Upper	Lower
Age	1.01	0.97	1.05
Not having a regular sexual partner	0.58	0.33	1.00
Change a condom during anal sex with multiple persons **	2.54	1.40	4.61
Have not more than one sexual partner in a party	1		
Often have more than one sexual partner in a party	0.88	0.36	2.11
Sometimes have sex with more than 1 sexual partners in a party *	0.47	0.23	0.96
Not sure how many sexual partners in a party	1.83	0.63	5.34
The average number of condom usage a person a party	1.06	0.99	1.13
Do not take proactive actions when having sex with someone who does not use a condom**	3.45	1.77	6.73
Do not wear a condom because of the factor of a person’s problem	1		
Do not wear condom during anal sex because of the factor of a condom (ex. not accessible, etc.)	1.32	0.72	2.43
Do not wear a condom during anal sex because it occurs by accident	1.01	0.47	2.16
Do not wear condom during anal sex because of drugs	0.99	0.32	3.07
Wear a condom during anal sex except when having sex with regular sexual partner(s)*	6.40	1.39	29.52
Do not use drugs	1		
Use drugs often	0.96	0.36	2.61
Use drugs seldom	1.37	0.68	2.75

*:p-value < 0.05 **:p-value < 0.01

ratio (AR) of the group having more than 1 sexual partner in a party minus the group having just one or less than 1 sexual partner in a party declined by 53%. The OR of adopting positive behavior during anal sex with a partner who does not want to wear a condom compared with those who do not have active behavior was 3.45. The OR of a person who wears a condom except when having sex with regular sexual partner(s) compared with the group of not using a condom because of the person's factor was 6.40.

C. The estimated HIV infective rate

According to the results of this study and the published parameters [15,16] and the assumption that the probability of being top anal or being bottom during anal sex is equal a person a time. The number of HIV new infected cases in a special setting was estimated by the equation listed as follows:

[the number of total person-time entering the settings a year \times the rate of HIV non-carrier of MSM happened in a special setting (92.2%)] \times the average number of having sexual behavior for a person each entering in a special setting (1.75 times) \times the rate of have not put the condoms on (65%) \times the HIV carrier rate of MSM in a special setting (7.8%) \times [the HIV infected rate via anal sex [(top:0.065%+ bottom: 0.5%)/2]

Approximate 80,000 persons visit this sauna every year. If there is no any intervention to prevent HIV infection, about 19 people will get HIV infection in this sauna (95% CI: 11.6 – 29.1). And, if a person is infected by HIV, the person must take pills against the virus in his whole life. Currently, the age of people infected by HIV ranges from 20 to 40 years old. Their life span is about 68 years old and is 10 years less than ordinary people. If a person got HIV infection has 30 years of life span and the medical care cost is approximately 300,000 NTD each year, a cost of 170 million in total must be paid by the government (300,000 X 30 years X 19 persons). The cost is much higher than the business had gained in the studied year, which was about 40 million. Businessmen may feel happy to strengthen their social responsibility because it can improve their income, according to this study's results. Moreover, the results showed that an increase of 90% of condom usage because of the intervention by "Sex Police". Hence, the study suggests that "Sex Police" must be implemented, which is able to enforce their customers to put condom on in the future. Consequently, the new infected cases estimated can be reduced to less than 3 persons in a sauna per year (95% CI: 1.1 – 8.2). The policy can prevent 16 people from HIV infection and then 4.8 million medical costs can be saved. In the following 30 years of these patients, 150 million medical costs can be saved. The authors command that the project has a significant benefit in the issue of preventing the spread of HIV.

Discussion and conclusion

Although there is no any formal publication to discuss about this topic of distributing condoms actively by using the intervention, the sex police, which helps homosexual group buddy and actively, is helpful in increasing the condom usage indeed. From the results of

the questionnaire, the acceptance of this intervention was high for most respondents, who were interviewed in this sauna. In conclusion, the pilot study has proved that a positive, direct intervention of sending condoms can increase the accessibility of condoms for the target population, compared with the traditional method, which sends condom passively. Hence, the project is worth of thinking for the government to develop a better health instruction policy in the future to defeat AIDS because the rate of condom usage has been increased in this study. There are three keys of success in this intervention:

A. Get help by a third party, e.g., NGO or CBO (Community-based Organization)

Because a local health bureau is operated by the government, any direct communication will usually result in a negative response. Hence, to co-operate with a third party, *i.e.*, NGO or CBO, to communicate may enhance its effectiveness, either directly or indirectly. In addition, the communication will be smoother if the co-operation is successful, especially the NGO is of homogeneity with the served persons.

B. The positive and co-operative attitude from these business managers

The key of this plan's success was the positive and co-operative attitude from these business managers. The most important point to affect business managers' attitude about the study is that businessmen feel that they have the responsibilities for their shops. They don't want the customers who get any disease after their visits. Thus, the business managers agreed with the study's target and the intervention operated by the TCDC and NGO. The health bureaus should put themselves in the businessmen's shoes to persuade the business manager. The workers in the setting are also influenced by the health bureau's attitude. Generally speaking, the workers from the settings acted as the sex police in this project. The workers may understand the goal of this project because they are also homosexual. Hence, he can use the words or gesture that homosexual can understand to finish jobs and then the goal that consumers must have safer sex can be achieved.

C. Periodic evaluation and improvement

Proper study design, an investigation before and after the intervention, evaluation and improvement continuous are all the keys of success. Through questionnaire and the interview of the key persons can understand where the weakness is in this project. Then, the weakness can be improved. The characteristics of customers and the target population can be discovered by simple analysis, and then, the final results can be used as reference for a better design of health education strategies. In this current project, the term of "Sex Police" may let people feel themselves are under-controlled. Hence, the term should be discussed in advance. What the authors think is a softer term may help the project be proposed smoother.

Moreover, the analysis in this project discovered that the most reasons influencing customers who have anal sex but do not wear condoms were "cooperate with the sex partner who do not wear condom", "do not like to wear a condom personally", and "the penis may become too soft to wear a condom". The fourth reason was "I am shame to ask the sex partner to wear a condom". Thus, despite the current policy, which is to enhance the

accessibility of condoms, the prevention policy of AIDS must also include the health instruction for customers and how to enhance the customer's self-efficacy.

The results of the logistic regression showed that the significant factors are "will change condoms if play with many people", "Sometimes have sex with more than 1 sexual partners in a party", and "Do not take proactive actions when having sex with someone who does not use a condom". Compared with the previous studies, which stated that the factors influence the use of condom during anal intercourse included age, the status of job, self-efficacy and drug behavior [13-14]. In this study, the factors of age and drug taking are not significant. The factor of self-efficiency can be explained by that those people will adopt more positive behaviors, *e.g.*, asking for condoms, taking condoms themselves when they met somebody who will not wear condoms during anal sex. A reason, people have more than one partner occasionally in a party, is significant in this regression model and it does affect the use of a condom. Some people might think that they are not so un-lucky to get infectious diseases when they just have anal sex with a person once. In the future, the officers should mention that to wear a condom is important during anal sex in health instruction. Moreover, "Wear a condom during anal sex except when having sex with regular sexual partner(s)" is a significant factor in the logistic model might be a result of the way questionnaires is constructed and the small number of who wear a condom except with regular sexual partners. Hence, this factor should be further investigated and the classification should be further refined. The concept of "100% condom" should be promoted to effectively prevent HIV infection because the regular sexual partner one recognizes may not be the regular sexual partner as one thinks.

To solve the issues of where to supply condoms, where the intercourse is occurring, and to comply the patterns of MSM group sex behaviors, the TCDC set in action of "Healthy, Safe and Friendly Shops" plan in the year 2012. The TCDC hopes that co-operation between the local health bureaus and the business owners can enforce the business self-management. The plan asks the business managers to supply condoms and K-Y lotion in the settings where intercourse may occur. The plan also encourages the business managers to do some active interventions, *e.g.*, the sex police to help the customers use a condom during the whole intercourse. The authors hope that the issue of how to manage the dramatic increase of AIDS patients can be solved.

The limitation of this study

This study only carried on in one sauna. The parameters used in this study were original from other publications. However, the business models of homosexual saunas are varied around Taiwan. The authors suggest that the mathematic model should be improved by adding more behavior models to get more precise results.

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Outbreak Investigation Express

Investigation of A Diarrhea Outbreak at A Psychiatric Care Center in Kaohsiung City

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Abstract

The Fifth Branch of the Centers for Disease Control, Taiwan (Taiwan CDC) received a diarrhea outbreak report on February 19, 2012, referring to the B zone of a psychiatric care center. The Fifth Branch then contacted the local health department and conducted the investigation and intervened the related preventive measures, including classification and quarantine on the basis of symptoms, cohorting care, the moving line control, increasing the frequency on residents' hand washing and environmental cleaning and disinfection, as well as health surveillance for residents and staff. This investigation revealed that a total of seven residents at the B zone were notified with symptoms of vomiting and diarrhea from February 17 to February 21. Among the collected four stool samples for virus tests and four anal swabs for bacterial tests, one stool sample resulted in norovirus positive while bacterial tests turned out to be negative. Compared to outbreaks in other long-term care centers, this psychiatric care center spent fewer days on notification, indicating its high alertness and effective implementation on surveillance and notification. It's also worth to share the experience with other long-term care facilities that early intervention of control measures in the beginning of the outbreak can successfully reduce the epidemic duration.

Keywords: diarrhea outbreak, norovirus

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