

Men Who Have Sex With Men (MSM) in Iloilo City, Philippines: Profile, Sexual History, Level of Knowledge About HIV/AIDS and Sexual Risk-Taking Behaviors

WILLIAM FRED P. ITALIA¹ and RYAN MICHAEL F. ODUCAO²
Central Philippine University, Jaro, Iloilo City, Philippines¹,
West Visayas State University, La Paz, Iloilo City, Philippines²
roducado@yahoo.com

Date Received: October 24, 2014; Date Revised: December 20, 2014

Abstract –This study was conducted to determine the sociodemographic profile, sexual history, level of knowledge about HIV/AIDS and sexual risk-taking behaviors of men who have sex with men (MSM) in Iloilo City. 126 MSM, who were members of MSM clans taken using stratified random sampling, were included in the study. Interview schedule was used to gather data. Frequency distribution and measures of central tendency were utilized for univariate analysis. To determine the relationship between knowledge and sexual risk-taking behavior, Chi-square was used. Findings revealed that most of the respondents are young, single, have some college education, unemployed, earning less than Php 6,000 and have an early sexual history. Most of the respondents have high knowledge of HIV/AIDS. However, they have multiple sex partners; nearly half does not use condom hence are at high risk of contracting HIV. There is no significant relationship between sexual risk-taking behavior and knowledge about HIV/AIDS. This study found that a high level of knowledge about HIV/AIDS does not guarantee safer sexual practices of the respondents. As long as there is a practice of risky sexual behavior, the risk of HIV transmission and infection remain high.

Keywords– MSM, HIV/AIDS, sexual risk-taking behavior

I. INTRODUCTION

Human Immunodeficiency Virus (HIV) infection and Acquired Immunodeficiency Syndrome (AIDS) have been a major threat to human health since its emergence in 1981. About 2.7 million new HIV infections were reported in the same year (United Nations Programme on HIV/AIDS, 2011). In the Philippines, 8,364 people were said to have been afflicted with HIV from 1984 to 2011, 341 of whom died from AIDS-related causes. Specifically, there is a total of 206 people living with HIV/AIDS in Western Visayas. Iloilo has the highest record, with 70 reported infected persons and 17 deaths (Department of Health, 2011). Of the total cases recorded in the country, cumulative data show that if homosexual contact and bisexual contact are grouped together under the term “men who have sex with men” (MSM), 63 percent of all HIV transmission can be attributed to MSM behavior. As defined by the World Health Organization (WHO, 2010) and United Nations Programme on HIV/AIDS (UNAIDS, 2011), men who have sex with men (MSM)

pertains to “all men who have sex with men, regardless of their sexual identity, sexual orientation, and whether or not they also have sex with females.”

According to the Center for Disease Control (CDC, 2012) in the United States of America, sexual risk behaviors account for most HIV infections in MSM. Unprotected receptive anal sex is the sexual behavior that carries the highest risk for HIV acquisition. For sexually active MSM, the most effective ways to prevent HIV and many other sexually transmitted infections (STIs) are to avoid anal sex, or for MSM who do have anal sex, to always use condom.

WHO cited in its publication in 2010, “Priority HIV and Sexual Health Interventions in the Health Sector for Men Who Have Sex with Men and Transgendered People in the Asia-Pacific Region”, that the higher risks for HIV and STI transmission is due to network effects. Any sexual network in which people have multiple or concurrent sexual partners is especially conducive to the spread of HIV. The proliferation of risky sexual behaviors amidst the widespread dissemination of

information about HIV/AIDS transmission presented a problem that required a deepening of understanding of the dynamics and behavior of MSM clans in order to curb the threats posed by HIV and other sexually transmitted infections. In addition, most studies done locally and internationally focused on individual MSM and not primarily on MSM in clans causing a scarcity of literature related to the study of MSM in clans or groups.

In light of these, the researchers find it necessary to conduct this investigation to provide an updated information source for investigators and agencies concerned, with the hope that policies and programs which are more relevant and sensitive to MSM can be formulated or enhanced in order to halt and reverse the incidence of HIV/AIDS.

II. OBJECTIVES OF THE STUDY

This study aimed to identify the profile, sexual history, level of knowledge about HIV/AIDS and sexual risk-taking behaviors among MSM in Iloilo City. Specifically, this study aimed to describe personal characteristics of the respondents in terms of their age, civil status, educational attainment, employment status, monthly income and perceived sexual identity; determine their sexual history; determine their level of knowledge about HIV/AIDS; determine their sexual risk-taking behavior; and determine whether there is a significant relationship between the level of knowledge about HIV/AIDS and sexual risk-taking behavior.

III. MATERIALS AND METHODS

This descriptive-relational study utilized the posttest-only one shot survey design. This was conducted on self-identified men having sex with men (MSM) who reside in Iloilo City, either permanent or transient (for at least six months), and are official members of six MSM clans in Iloilo City. Only those who are 18 years old and older were included. There were 140 respondents, but only the 126 who reported that they know or heard about HIV/AIDS were the ones used as the actual respondents for the analysis of the study. Face-to-face interviews were conducted in the months of March to July 2012. The interview schedule patterned from the Guidelines for Repeated Behavioral Surveys in Population at Risk for HIV was used. A researcher-made knowledge scale instrument was also used, validated and analyzed for internal consistency

using Cronbach's alpha that yielded a coefficient of 0.71.

After the mapping and identification of the potential clans with the help of a key person, the researchers personally met with each clan leader and explained to them the nature and significance of the study. Ten (10) clan leaders were approached, but only six (6) gave a positive response after a conference they had with their respective members. The researchers then scheduled a meeting with each clan leader to obtain the list of their members who met the inclusion criteria. All clan members only used pseudonyms to represent themselves in the clan for it was like an implied rule never to tell their actual name in the group, save for some whom they know personally. A proportionate sample size from each clan was drawn up using stratified random sampling, and the actual respondents were chosen through lottery. With the aid of the clan leader or a key person from each clan, the researchers scheduled a meeting with each respondent. Those who refused were replaced by lottery.

An informed consent detailing the purpose of the study and all the rights of the respondent, especially the right to rescind consent anytime during the interview was obtained. It also emphasized that all information collected from the respondent would be dealt with utmost confidentiality; that no information, in whole or in part, would be released without the explicit consent from or to be used against the respondent, although their collective responses as a group would be released for the purpose of scholarly pursuits.

Data were encoded into SPSS spreadsheets and then processed and analyzed using the appropriate statistical tools. For descriptive statistics, mean, percentage and frequency distribution were used. For inferential analysis, Chi-square was employed to determine the relationship between the level of knowledge and sexual risk-taking behavior. Significance was set at the value of 0.05.

IV. RESULTS AND DISCUSSION

Table 1 shows that on the average, the MSM in this study are young adults ($\bar{x} = 23$ years old). Majority have some college education (48.4%) and graduated from college and postgraduate course (34.9%). There is almost an equal distribution of unemployed (51.6%) and employed (48.4%). The average monthly income is Php 7,241.00 with the majority having a monthly income of less than Php 6,000 (56.3%).

Table 1. Distribution of Respondents According to their Personal Characteristics and Perceived Sexual Identity

Sociodemographic Profile and Perceived Sexual Identity	f	%
Age		
18 – 19 (adolescents)	45	35.7
20 – 24 (young adults)	57	45.2
25 and older (middle adults)	24	19.1
Mean = 23 years old		
Educational Attainment		
High School and less	21	16.7
Some College Education	61	48.4
College and Postgraduate Level	44	34.9
Employment Status		
Unemployed	65	51.6
Employed	61	48.4
Monthly Income/ Allowance		
High Income (more than 6000)	55	43.7
Low Income (below 6000)	71	56.3
Mean = 7,241.95		
Perceived Sexual Identity		
Straight	4	3.2
Homosexual	24	19.0
Bisexual	96	76.2
Woman	2	1.6
TOTAL	126	100

These findings are almost similar to the one reported by the 2009 Integrated HIV Behavioral and Serologic Surveillance (IHBSS), which stated that most-at-risks populations (MARPs) were young with 65 percent of MSM belonging to the 15-24 year old age group. This trend can be attributed to the access to and adeptness in the latest technology of the young people. Clan memberships are primarily sent and approved through the Internet or more commonly through SMS.

Further, majority of the respondents consider themselves bisexuals (76.2 %) although only 10 of them had sex with female partners. Nearly two out of ten respondents see themselves as homosexuals. Four (3.2 percent) consider themselves as straight men while two (1.6 percent) regard themselves as women. According to some respondents, their fellow MSM tend to label themselves as bisexuals although they are actually the typical *mahinhin* Pinoy gay. Being called a “bisexual” or *bi* enables one to easily hook up with a straight-acting gay man, a sexual situation which fulfills their fantasy of having sex with a straight man. Moreover, a lot of respondents explicitly express their distaste of effeminates as sexual partners and prefer the company of the more *brusko* (manly) ones.

Table 2. Distribution of Respondents According to their Sexual History

Sexual History	f	%
Age of Sexual Debut		
Below 18 years old	109	86.5
18 years and older	17	13.5
Mean = 15		
Type of Sexual Activity on Sexual Debut		
Anal	56	44.4
Oral	55	43.7
Vaginal	15	11.9
Sexual Role if Anal or Oral on Sexual Debut		
Receptive	55	49.6
Insertive	31	27.9
Both Insertive and Receptive	25	22.5
Sex of Sexual Partner on Sexual Debut		
Male	108	85.7
Female	18	14.3

Table 2 shows that on the average, the respondents had their first sexual intercourse at the age of 15. This is considerably lower compared to the mean age of sexual debut of 18 and 16 reported in the 2002 Young Adult Fertility and Sexuality Study and the 2005 IHBSS respectively. Majority of the respondents had their first sexual intercourse – oral, anal, vaginal – when they were under 18 years old (86.5%). Four out ten respondents had anal intercourse (44.4 %) as their first sexual experience. The same number counts for oral sex (43.7%); whereas, only one out ten respondents had vaginal sex (11.9 %) during their first sexual experience. Most of those who had anal or oral sex were receptive (43.7 %). Nearly half of those were insertive (22.2 %) while the remainder of them both practiced insertive and receptive roles (19.8 percent). A total of 85.7 percent of the respondents had their first sexual intercourse with another male while only 14.3 percent had sex first with a female. Four out of ten of those who first had sex with another male did it with a straight man (42.1 %) while 33.3 percent did it with a bisexual. Only 8.7 percent admitted of having their first sexual experience with a gay man and there were two (1.6 %) who reported of having their first sex with a transsexual.

Majority of the respondents had their first sexual intercourse with a friend (28.6 %), mostly with acquaintances (41.7 %) and group friend or *barkada* (27.8 %). One out of four of them had their sexual debut with their best friend (25 %). A considerable number of

them had their first sexual experience with a neighbor (19 percent). Two experiences were noteworthy. One respondent was persuaded by his 27-year-old neighbor to have anal sex with him. He was seven years old. The other one had his first oral intercourse when he was five with his six-year-old neighbor.

A considerable number of them had their sexual debut with their boyfriend (15.1 %) while 7.1 percent of them did it with their girlfriend. A major concern is that one out of ten of the respondents had their first sex with a relative (11.9 %). The breakdown for relatives show that majority of them had their first intercourse with their cousins (73.3 percent), most of which had been anal (54.5 %) and oral (36.4%) while the remaining was attributed to vaginal sex (9.1 %). It's also disturbing that some did it with their older brothers (13.3 percent) and brother-in-law (6.7 %). Further inquiry, however, revealed that they were coerced by their brothers to have receptive anal sex with them. One was even forced by his uncle (6.7 percent) to have anal sex with him.

Some lost their virginity to a paying partner (6.3 percent). Some did it with someone they just met (5.6 percent) in public parks, beaches, clubs, and movie houses or their classmates (5.6 percent). Only one (0.8 percent) said he had his first intercourse with a female commercial sex worker.

A huge proportion of the respondents did not use condom during their first sexual intercourse (83.3 percent). The respondents themselves (61.9 percent) initiated to use condom out of the 16.7 percent who used condom during their first sexual intercourse, some of them were persuaded by their partners (33.3 percent) or mutually decided with their partner (4.8 percent). Upon further interview, the respondents who used condom verbalized that safety from diseases (61.9 percent) was the primary reason why they used condom, while those who did it with female partners used it to prevent pregnancy (28.7 percent). Others said they wanted their intercourse to be smooth (4.7 percent) and don't trust their partner (4.7 percent) as the principal reasons they used condom.

Most of the respondents who did not use condom during their first sexual intercourse attributed it to their young age. They said that they didn't know anything about condom when that happened. Others said it was only oral sex, so there was no need to use any condom. There were some who already knew about condom but just weren't able to obtain it because their intercourse was unplanned. Trust on their sexual partner, request of

their partner not to wear condom and alcohol intoxication were the other reasons mentioned.

Table 3. Distribution of Respondents According to Level of Knowledge About HIV/AIDS

Level of Knowledge About HIV/AIDS	f	%
High	99	78.6
Low	27	21.4
Mean = 14.60		

Table 3 shows that on the average, the respondents have high knowledge about HIV/AIDS ($\bar{x}=15$). This is evidenced by the fact that almost all of the respondents (78.6 percent) have high knowledge about HIV/AIDS. Only a few (21.4 percent) have low knowledge about HIV/AIDS. This can be attributed to the strengthened program of the DOH on increasing awareness of the people, especially MARPs about HIV/AIDS.

These findings are in contrast to the ones found out by government studies National Demographic Health Survey (2007) and IHBSS (2009) which revealed that knowledge about HIV/AIDS by MSM was generally low. However, it was noted that there was an apparent increase in the knowledge by MSM from 10 percent in 2007 to 34 percent in 2009.

Table 4. Distribution of Respondents According to Sexual Risk-taking Behavior

Sexual Risk-taking Behavior	f	%
High Risk	76	60.3
Low Risk	50	39.7

Sexual risk-taking behavior refers to the behaviors that lead to the possible transmissions of HIV/AIDS and increase the likelihood of having HIV infection. Studies to date have identified that unprotected sexual intercourse, having multiple partners and injection drug use are the main risk behaviors for HIV transmission. Unsafe sexual behavior, risky sexual behavior or sexual risk-taking behaviors are the terms commonly and widely used by scientists and researchers to represent sexual activity or behavior that increases the risk of getting STDs including HIV/AIDS (Fitzpatrick, & Kazer, 2011).

In this study, sexual risk-taking behaviors were investigated in terms of condom use during anal intercourse in the last six months. The respondents were noted to have multiple sexual partners; thus, the area of investigation of sexual risk-taking behavior was in

condom use. A respondent is classified as low risk if he did not have anal sex or consistently used condom during anal intercourse with another man in the last six months and classified as high risk if he had unprotected anal sex or inconsistent condom use during anal sex in the last six months.

Table 4 shows that the respondents are predominantly at high risk (60.3 percent) for contracting HIV/AIDS. Some of them (39.7%) were at low risk of contracting HIV/AIDS.

This finding coincides with the 2009 IHBSS, which revealed that most MSM in the Philippines were at high risk of contracting HIV/AIDS.

Table 5. Distribution of Respondents According to Number of Sexual Partner

Number of Sexual Partner	f	%
2 – 7	58	46
8 and more	68	54
Mean = 12		

Table 5 shows that most of the respondents had eight and more male sexual partners in the last six months (54 percent) while only 46 percent had sex with 2-7 male sexual partners. In addition, the respondents had an average of 12 male sexual partners in the last six months with one having sexual partners as high as more than 150. In-depth interview revealed that the common venue for meeting sexual partners outside of their clan was through the Internet using various social networking sites most notably Planetromeo (www.planetromeo.com) or PR as it is popularly called and Facebook (www.facebook.com). Many also reported to having found their sexual partners in clubs. Some met their sexual partners through referral by friends or acquaintances, which means they were introduced. There were some who reported that some men who were referred to them or they referred to others were men for pay. However, referral does not only mean introduction of men for pay; it also includes sexual partners who were not for pay, rather just for sex. This is troubling knowing that any disease that may have come from one of them can be easily transmitted to anybody in their circle of friends. Texting is also a leading means of finding sexual partners. There was even one who got the number of his sexual partner from an FM radio show. A considerable number of sexual partners were also met on the streets, in the malls, in fiestas, or *Bayle*, in the workplace, and even maritime schools (where most of the enrollees are males). Gay

bars were once known to be the leading place for MSM to meet or get sexual partners, but only one (1) responded to have met a sexual partner from this place. It is also important to state that massage parlors were also venues to meet sexual partners. This only means that MSM do not congregate much in conspicuous areas anymore, rather they switched to the more readily accessible and safer road of the virtual world, affirming the statement made by the DOH in a press release in 2012 that the Internet and social networking sites are now a major risk factor for the transmission of HIV.

Table 6. Distribution of Respondents According to Condom Use

Condom Use	f	%
Used Condom	57	45.2
Consistent	36	28.6
Inconsistent	21	16.7
Did Not Use Condom	55	43.7
No Anal Sex	14	11.1

Table 6 shows the distribution of the respondents according to their use of condom with every anal intercourse in the last six months. The data reveal that a total of 112 respondents had anal sex in the last six months. The respondents who used condom (45.2 percent) during anal sex are slightly higher than those who did not use condom (43.7 percent). Only three out of ten of those who used condom (32.1 percent) used it always, 15.2 percent used condom sometimes, and 4.5 percent used condom once. Moreover, there was a reported 6.9 percent of condom breakage among those who used condom, which is a considerably lower incidence. Half of those who experienced condom breakage continued having sex without using a new one while the other 50 percent used a new set of condoms. Ideally, the broken condom should be discarded, and a new one should be used. This inconsistent practice still may lead to a greater chance of contracting HIV.

These findings are close to the 2009 IHBSS result of condom use of 32 percent, which was considered low, considering that the national target is 80 percent (DOH, 2011).

Upon further interview, most of those who used condom mentioned safety from sexually transmitted diseases (STDs) as the main reason of using it. Many also said that they only used condom because they doubt their sexual partner. This means that although they have just met their sexual partner, as long as they perceived him to be free from diseases, they will decide

not to use condom. This action is dangerous because there are HIV-infected individuals who present few or even no symptoms at all. There was one who responded that the use of condom (once) was just *trip lang* (he just felt like using it).

For those who used condom sometimes in the last six months, there was a recorded average of 48 percent of condom use with 7.5 percent or three times out of 40 anal intercourses as the lowest frequency. This means that the respondents used condom only almost half of the time they had penetrative sex. There were two (2) who could not recall their frequency of condom use. Inconsistency in condom use is primarily attributed to unavailability of condom at the time of intercourse. Others opted not to use condom at times because it “feels better” without it. Another disturbing fact is that some chose not to use condom if they like, know or trust their sexual partner. There were instances when the respondents were requested by their partner(s) not to use any condom.

There are various reasons for the choice of a majority of the respondents not to use condom at all. The major reason presented for not using condom was dislike of condom for it diminishes the sensation during sex resulting in decreased satisfaction in either one or both of them. Sadly, there were some who said they were just lazy to use condom, if not uninterested. Some reasoned that they were not able to use condom because their sexual intercourses were “on the spot” or because it’s just added *gastos* (expense). There were also some who said that they trust their partners, so there was no need for condom. Others explained that all their sexual activities were purely oral sex so “why use a condom?” One respondent confidently said that he does not use condom since he was always on the insertive role and not on the receptive end. This is dangerous because according to the Public Health Agency of Canada (2012) unprotected insertive vaginal or anal intercourse also carries a significant (although relatively less) risk. Another respondent just followed the requests of his partners not to use a condom. This indicates that MSM should be taught to assert their rights to protected sex. There were also some who were intoxicated, so they were not able to put on any condom. But there were also those who would like to use condom but were shy to buy it, indicating social stigma on those who buy condom, as a major factor in the use of condom among MSM.

It is also notable that out of the 57 who used condom, only 50 percent of them had possessed

condom at the time of the interview. Moreover, a vast number of the respondents who didn’t use condom didn’t have condom at the time of the interview (92.65 percent) while 7.35 percent of them had in their possession condom upon request for it to be shown. These figures just validate the result of the previous discussion that not all the time can condom be used because MSM don’t have a ready stock with them wherever they go. On the other hand, the possession of condom may not guarantee utilization during penetrative sexual intercourse.

Table 7. Distribution of Respondents According to Relationship between Knowledge about HIV/AIDS and Sexual Risk-taking Behavior

Sexual Risk-taking Behavior	Knowledge about HIV/AIDS				Total	
	Low		High		f	%
	f	%	f	%		
High	20	74.1	56	56.6	76	60.3
Low	7	25.9	43	43.4	50	39.7
TOTAL	8	100	118	100	126	100
Chi = 2.717		p = .099		not significant		

Data in table 7 show that that the percentage of respondents who had low knowledge about HIV/AIDS and high sexual risk-taking behavior (74.1 percent) is greater than that of the respondents who have high knowledge and high sexual risk-taking behavior (56.6 percent). The figures do not give a clear picture of any association. This is validated by the result of Chi-square test that provides evidence that the null hypothesis cannot be rejected (Chi=2.717, p=.099). This means that sexual risk-taking behavior does not change with an apparent increase in the knowledge about HIV/AIDS. This contradicts the findings of Deb, et .al. (2009), Liu, et. al. (2009), and Qu, et .al. (2009), that knowledge significantly improves condom use. However, this is an affirmation of the 2009 IHBSS report which stated that knowledge about HIV infection does not automatically translate into changed behavior, although MSM who are knowledgeable about HIV “tend” to use condom, especially with a paying partner (DOH, 2010). This also concurs with the findings of Jian, et. al. (2010) and Wang, et. al. (2010) which revealed that there was no linear correlation between knowledge and condom use among MSM.

V. CONCLUSIONS AND RECOMMENDATIONS

Most of the respondents are young, single, have some college education, unemployed and earning less than Php6,000. The respondents have adequate information about HIV/AIDS, especially in its transmission, the high-risk groups, signs and symptoms and treatment. The respondents have early sexual experiences. They started having sex at such a young age, which predisposes them to have more multiple partners by the time they reach adulthood. Moreover, most of them share their first sexual experience with people they know resulting in a consensual act, although some were coerced to perform the action, especially by older relatives. Condom use during sexual debut is very low. The number one reason for not using condom during sexual debut was no knowledge at the time of intercourse. In addition, the majority of the first sexual experiences of the respondents occurred at the age of 13. The respondents have sex with multiple partners. Their propensity to practice unprotected anal intercourse with anyone inside and outside their clan predisposes them to a high probability of contracting and transmitting any sexually transmitted disease. The presence of the crossover from man-to-man sexual intercourse to man-to-woman intercourse signifies a major issue of disease transfer not only to other men but also to women. A bigger problem ensues considering that a high number of those female sexual partners were casual sex partners, meaning they were just chance encounters. Many of the respondents are exclusively insertive in their sexual roles either with partners within their group or those unrelated to their group. Condom use is still far below the national target of 80 percent. The respondents are at a high risk of contracting HIV and can predispose them to acquiring HIV infection and other sexually transmitted diseases. The level of knowledge about HIV/AIDS of the respondents does not have a significant relationship with their risk-taking behavior. This affirms the findings of the 2009 IHBSS, which concluded that knowledge about HIV/AIDS does not automatically translate to safe sexual behavior.

This study found that a high level of knowledge about HIV/AIDS does not guarantee safer sexual practices of the respondents. Although information campaigns by the government have been extensively used to increase awareness of HIV/AIDS in an attempt to decrease risk for HIV infection and the overall incidence rate, other methods relevant to the behavior and needs of MSM must be enforced in order to change the risky sexual behavior that they are practicing. As

long as there is a practice of risky sexual behavior, the risk of HIV transmission and infection remain high.

REFERENCES

- Deb, S., Dutta, S., Dasgupta, A., Biswas, B. (2009). Sexual practice and perception of HIV/AIDS amongst men who have sex with men in Kolkata. *Indian Journal Community Medicine*, 34(3):205-11. Retrieved from doi: 10.4103/0970-0218.55285.
- Fitzpatrick, J. & Kazer, M. (2011). *Encyclopedia of nursing research*. 3rd edition. New York: Springer Publishing Company.
- Jian, D, et al. (2010). *A survey on AIDS knowledge rate and sexual behavior among men who have sex with men population at sexually transmitted disease clinic*. Retrieved January 25, 2012 from <http://www.ncbi.nlm.nih.gov/pubmed/20693718>
- Liu, S., Wang, K, Yao, S., Guo, X., Liu, Y. & Wang, B. (2009). Knowledge and risk behaviors related to HIV/AIDS, and their association with information resource among men who have sex with men in Heilongjiang province, China. *BMC Public Health* 2010. Retrieved from doi:10.1186/1471-2458-10-250
- Philippines. Department of Health (DOH). (2010). *2009 integrated HIV behavioral and serologic surveillance*. Retrieved from <http://www.doh.gov.ph/sites/default/files/2009%20IHBSS%20Factsheets.pdf>
- Philippines.DOH. (2011). *December 2011 Philippine HIV/AIDS registry*. Retrieved from http://www.doh.gov.ph/sites/default/files/NEC_HIV_Dec-AIDSreg2011.pdf
- Public Health Agency of Canada. (2012). *HIV transmission risk: a summary of the evidence*. Retrieved from <http://www.catie.ca/sites/default/files/HIV-TRANSMISSION-RISK-EN.pdf>
- Qu, B., Guo, H.Q., Liu, J., Zuo T.M., Zhang, Y., Sun, G. (2009). *The relationship between Chinese construction workers' HIV/AIDS-related knowledge, attitudes and behaviour: a structural equation model*. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/19761705>
- Wang, T, et al. (2010). *Survey on HIV/AIDS-Related knowledge and behavior of high risk population in Taiyuan City*. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/20364594>

Joint United Nations Programme on HIV/AIDS
(UNAIDS). (2010). *Global report: UNAIDS report
on the global AIDS epidemic*. Retrieved from
[http://www.unaids.org/globalreport/documents/2010
1123_GlobalReport_full_en.pdf](http://www.unaids.org/globalreport/documents/20101123_GlobalReport_full_en.pdf)

UNAIDS (2011). *Political declaration on HIV/AIDS:
intensifying our efforts to eliminate HIV/AIDS*.
Retrieved January 23, 2011 from
[http://www.unaids.org/en/media/unaids/contentasset
s/documents/document/2011/06/20110610_UN_A-
RES-65-277_en.pdf](http://www.unaids.org/en/media/unaids/contentassets/documents/document/2011/06/20110610_UN_A-RES-65-277_en.pdf)