

RESEARCH ARTICLE

FACTORS ASSOCIATED WITH CONDOM USE TO PREVENT HIV INFECTION: AN ONLINE SURVEY OF FILIPINO MEN WHO HAVE SEX WITH MEN

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Abstract

The steady rise in newly-diagnosed cases of Human Immunodeficiency Virus (HIV) has been historically associated with Men-who-have-sex-with-men (MSM) in the Philippines. This has been attributed to low condom use despite longstanding guidance on their efficacy in preventing the spread of HIV among other sexually transmitted diseases. The objective of the study was to describe the sociodemographic and sexual characteristics of an online sample of Filipino MSM, and identify which factors are significantly associated with condom use at last sexual intercourse. Purposive sampling through referrals within the MSM community resulted in a sample of 491 Filipino MSMs. Bivariate analysis revealed that MSM's civil status, gender expression, relationship status, their predominant sexual position, and the sexes of their sexual partners are significantly associated with the use or non-use of condoms during their last sexual intercourse. The study may prove to be beneficial to public health leaders in the implementation of a comprehensive group of interventions to increase condom use.

Keywords: *Human Immunodeficiency Virus; Men Who Have Sex With Men; Condom Use; Sexual Behavior; Survey Methodology*

Since the first cases of human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) were recorded in 1984, we have seen country-wide responses to curb the epidemic (Farr & Wilson, 2010). As the world continues to see a steady decline in new cases of HIV, the Philippines has found itself in a peculiar spot, with the World AIDS report recognizing the country as one of the few countries facing a growing number of newly diagnosed cases of HIV (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2014). The Philippines initially saw a “low and slow” epidemiologic pattern within an isolated demographic, but it was in the mid-2000s when exponential growth was first noticed. In 1999, the incidence of newly diagnosed HIV cases was less than one new HIV infection per day but as of August 2019, there was one newly diagnosed case for every 40 minutes or 36 Filipinos diagnosed with HIV per day (Department of Health – Epidemiology Bureau [DOH-EB], 2019). As of August 2019, the Philippine Department of Health (DOH) reported a total of 70,740 reported HIV cases in the country since the agency started collecting data in 1984. More than three-fourths of which were either males-who-have-sex-with-males (MSM) or transgenders (TG) aged 15-24 and 25-34 (DOH-EB, 2019). More than half of all known cases (58%) were availing of antiretroviral therapy. The

highest densities of cases were localized in urban to highly urban National Capital Region, Region 4A, and Region 3 (DOH-EB, 2019; Farr & Wilson, 2010; UNAIDS, 2014).

The Philippines sadly faces this current epidemic, despite warnings from domestic and international HIV experts (Farr & Wilson, 2010). This has been connected to the low condom use observed among Filipinos and a widening gap between the age of first sex and age of first condom use (DOH-EB, 2016) among key populations. Both phenomena are compounded with the prevalence of other sexually-transmitted diseases and the practice of having multiple sexual partnerships (Concepcion, 2012; DOH-EB, 2019; UNAIDS, 2010; UNAIDS, 2013). The DOH-EB looked into the sexual behaviors of MSM and TG and found it alarming that the earliest age of first sex was ~14 years old for males (median: 15 years old). The Integrated HIV Behavioral and Serologic Survey (IHBSS) also notes a three- to four-year gaps between the age of sexual debut and age of first condom use among MSMs and TG (DOH-EB 2016). Researchers discovered that the subset of adolescents that did not use a condom on their sexual debut was found to have had higher chances of contracting STIs, and continuing unsafe sex practices (Shafii,

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Stovel, & Holmes, 2007). The IHBSS revealed that 87% of MSM and TG knew that condoms were effective in reducing HIV risk, while 82% knew that having only one uninfected sexual partner was another strategy to reduce HIV infections (DOH-EB, 2016). The Department of Health, likewise, revealed that the median number of sexual partners MSM and TG had was 2-3 during the 12 months prior, with only 13.23% of those with multiple sexual partners reported use of a condom during last sexual intercourse (DOH-EB, 2016). Data from the IHBSS corroborate the findings of Shafii, Stovel, & Holmes (2007).

Researchers, who want to assess condom-use behavior, use the outcome “condom use at last sexual encounter” to address the recall bias inherent in asking participants of their condom behavior over a long period. The variable has been used in other representative surveys and yielded similar results to other methods of assessing condom use (Abara, Oraka, Jeffries, Chavez, Nasrullah, & DiNenno, 2017). Condom use at last sexual encounter was significantly associated with income in the last month, having STI symptoms in the last year, HIV risk perception, having comprehensive knowledge of HIV, and the year survey was conducted (Reza et al, 2020). Condom use was also predicted by the MSM's health beliefs regarding HIV (Calaguas, 2020), and social and behavioral norms (Wang, Tucker, Liu, Zheng, Tang, & Ling, 2018). With the burden of HIV predominant among MSM, understanding the prevalence and factors associated with condom use is critical in moderating their risk for HIV and other STIs.

This study aimed to explore and identify the factors that are associated with Filipino MSM's condom use at their last sexual encounter. Specifically, the study aimed to (1) describe the sociodemographic and sexual characteristics of an online sample of Filipino MSM, (2) identify the sociodemographic, and sexual characteristics that are significantly associated with condom use at last sexual intercourse. The results of this study may be beneficial to government health program leaders directly involved with initiatives to reduce cases of HIV in the Philippines. It may also serve as a guide to community health nurses in educating MSM on health-promoting behaviors. The study may be foundational to interventional studies that are aimed at improving compliance with condom utilization.

METHODS

Research Design

An analytical cross-sectional research design was used to identify significant associations between the Filipino MSM's sociodemographic and sexual characteristics and their condom use at last sexual intercourse. Data collection was done from April 2019 to December 2019.

Sample and Setting

A minimum of three hundred eighty-four (384) Filipino MSM participants were needed for the study based on the open-access web-based epidemiologic statistics package (OpenEpi.com, version 3.01) after factoring in the default unknown population size of one million, hypothesizing a 50% chance of the outcome variables being noted at 95% confidence interval. (Dean, Sullivan & Soe, 2013). Given the unique and hidden population of Filipino MSM, the researcher purposefully welcomed participants from various regions of the Philippines. Participants must be 18 years old or older at the time of the survey, must understand conversational English, and was currently residing in the Philippines at the time of the data collection.

Data Collection

The web-based software “Google Forms” was used in collecting data, Google Forms is an app included in the free offerings of Google drive's services, which enabled the collection of information from the online sample of MSM. The entirety of the instrument was pre-tested for readability, understanding, and accessibility by 15 Filipino MSM, who were not part of the final sample.

A call for research participants was posted on MSM community-based and civil society communication boards. Interested participants' email addresses were collected. Potential participants were sent an email that included a cover letter, enclosed instructions, which contained the inclusion criteria and the hyperlink to study instruments. Upon opening the link, participants were presented the study's background, purpose, and the informed consent form. The consent form explicitly mentioned that the study will not collect any identifying information such as the participant's name, email address, or IP address. A Data Storage Policy was included in the informed consent form, explicitly stating how their data sample was to be handled. The researcher then downloaded the responses unto an MS excel file and checked for missing or erroneously inputted data for exclusion, before subjecting the data set to statistical analysis.

Study Measures

Dependent variable. The study explored the correlates of use of condom during last sex of Filipino MSM through self-reporting survey items. Condom use was assessed by a binary question, answerable by yes or no, asking “*Did you use a condom during your last sexual intercourse?*”

Independent variables. The participants' demographic and psychosocial profile like age, gender identity and expression (*gender identity, and expression*), sexual orientation (*homosexual, bisexual, heterosexual, among others*), educational level (*Attended grade school, Grade school*

graduate, Attended high school, High school Graduate, Attended college, College Graduate), and marital status (Single; Married; Common Law; Widow). Filipino MSM's sexual practices were also studied, they were asked about their sexual partner's sex (Females, Males, Transgender Women), their predominant sexual role (Top/Insertive, Bottom/Receptive, Versatile, or Side), and how often they knew about their sexual partner/s HIV status, using a five-point Likert scale (Never, Rarely [~25% of the time], Moderately [~50% of the time], Frequently [~75% of the time], Always [100% of the time]).

Data Analysis

IBM's Statistical Package for Social Science (SPSS) v23 software program was used to process the statistics to describe the sample in terms of their sociodemographic and sexual characteristics, and also to assess any association between the participants' demographic, psychosocial and sexual characteristics and their use of condom during last sex. Analysis of the dataset included frequency distribution, measures of central tendency, cross-tabulation, and Chi-square to assess for any association between the independent variables, and the use of condom during last sex. P-value was set at < 0.05 for determining the significance of findings.

Ethical Consideration

Due to the sensitive nature of the research subject matter, the researcher endeavored to protect and respect the participants' rights to full disclosure, self-determination, confidentiality, non-maleficence, and privacy. The researcher provided each participant a cover letter explaining (1) the nature of the study; (2) the responsibilities of the participants and the researcher; (3) the benefits and risks of the study; (4) the participant's right to withdraw from the study at any given time and to be free from the discrimination or prejudice; (5) debriefing protocol. The researcher entertained questions the participants had and secured a voluntarily-signed informed consent before the administration of the questionnaire. The researcher sought and gained approval from the Holy Angel University – Institutional Review Board. The researcher has no conflict of interest to disclose.

RESULTS

A total of 491 Filipino MSM participated and completed the online survey. The mean age of the surveyed MSM was 25.95 (sd±6.086). Their profiles are listed in Table 1.

Majority of the MSM surveyed reported only having disclosed their sexual orientation to a select few (N=272; 55.4%), had experienced stigmatization based on sexual orientation in the past 12 months (N=283; 57.6%), were not in a mutually

monogamous relationship (N=292; 59.5%), and had sex with other MSM (N=436; 88.8%). When asked about their predominant sexual role, 188 (38.3%) reported that they were versatile, or able to when desired to be anal-receptive or penile-insertive. When asked how frequently are they aware of their sexual partners' HIV status, the majority (N=311; 63.4%) were not aware 50% of the time. The majority shared that they have used a condom at least once in their life (N=441; 89.8%), but only 298 (60.7%) reported using a condom during their last sexual intercourse.

Table 1. Profile of the online sample of Filipino MSM (N=491)

	N	%
Age		
18-19	44	9
20-29	334	68
30-39	97	19.8
40-49	13	2.6
50 and Up	3	0.6
Civil Status		
Single	474	96.5
Married	4	0.8
Partnered	13	2.6
Educational Attainment		
Attended HS	1	0.2
HS Graduate	19	3.9
Attended College	102	20.8
College Graduate	300	61.1
Graduate Degree	49	10
Professional Degree	20	4.1
Income		
<40,000	251	51.1
40,000 – 59,000	86	17.5
60,000 – 99,999	54	11
100,000 – 249,000	70	14.3
250,000 and above	30	6.1
Gender Identity		
Cis male	179	36.5
Male	124	25.3
Non-Binary	152	31
Female	33	6.7
Trans female	3	0.6
Gender Expression		
Masculine	71	14.5
Leaning towards masculine	163	33.2
Androgynous	188	38.3
Leaning towards feminine	66	13.4
Feminine	3	0.6
Sexual Orientation		
Homosexual	287	58.5
Bisexual	172	35.5
Heterosexual	4	0.8
Others (Pansexual, Demisexual, and others)	28	5.7

Table 2. Associations between the participants' profile and their use of condom during last sexual intercourse (N=491)

	X ²	Df	p-value
Age	5.244	4	0.263
Civil Status	6.459	2	0.040
Educational Attainment	3.165	5	0.675
Income	3.815	4	0.432
Gender Identity	2.364	4	0.669
Gender Expression	9.972	3	0.041
Sexual Orientation	4.453	4	0.217
Disclosed own Sexual Orientation	1.862	2	0.394
Received Sexual Orientation based stigma	1.362	1	0.243
Engaged in monogamy	5.783	1	0.016
Predominant sexual role	11.605	4	0.009
The gender identity of the sexual partner	8.847	4	0.031
Knows of the sexual partner's HIV status	5.903	4	0.207

Note: Statistically significant results (p-value <0.05) in **bold font**

Chi-square tests of independence were performed to examine the possible associations between the participants' characteristics and their use or non-use of a condom with the last sexual intercourse (see table 2). It showed that the association with civil status with their use or non-use of condoms during last sexual intercourse was significant, $X^2 (2, N = 491) = 6.459, p = 0.040$. The association of the sample's gender expression and their condom use or non-use was also significant, $X^2 (4, N = 491) = 9.972, p = 0.041$. Whether participants engaged in monogamy or not was significantly associated with their use or non-use of condoms during last sexual intercourse, $X^2 (1, N = 491) = 5.783, p = 0.016$. The sample's predominant sexual role (anal-receptive) was also significantly associated with their use or non-use of condoms during last sexual intercourse, $X^2 (4, N = 491) = 11.605, p = 0.016$. The association with the gender identity of their sexual partners was significant, $X^2 (3, N = 491) = 8.847, p = 0.031$.

DISCUSSION

The analysis revealed the prevalence of condom use during the last sex and associated factors of an online sample of Filipino MSM. A moderately high-level prevalence of condom use at last sexual intercourse was recorded, and the participants' gender expression, civil status, being in a monogamous relationship, their predominant sexual role, and the sex of their sexual partners were the most significant associated factors to condom use at last sex. The results of this study are unlike most of the previous studies on condom use in the Philippines dealt with general population surveys with larger sample sizes (DOH-EB, 2016; DOH-EB, 2019).

The demographic characteristics (see Table 1) of the online sample of Filipino MSM, shared several similarities with the demographic profile of the 2015 Philippine National Integrated Health Behavior and Serologic Survey (N=9498) which also described a fairly young MSM population (18-24 years old; 49%), who were single (98%), currently employed (42%), had at least finished high school (55%) and lastly, identified being more masculine (61%) (DOH-EB 2016).

The analysis revealed that the participants' use or non-use of condoms during the last sexual intercourse was significantly associated with the participants' gender expression and the sexes of the participants' sexual partners, but was not associated with the sex partner's gender identity or sexual orientation. This could be due to Filipino MSM's preference for those who are masculine-presenting sex partners because being effeminate is associated with being more promiscuous. A study corroborates this as it revealed that those who projected a more manly persona are perceived to be "safer" options to have sex without a condom (Musunguzi, et al., 2015). A study in Brazil echoed a similar finding where transwomen were perceived to be riskier sexual partners, urging better condom compliance (Blair, Segura, Perez-Brumer, Sanchez, Lama, & Clark, 2016).

The analysis revealed that being in a monogamous relationship is significantly associated with condom use or non-use at last intercourse. Being in a monogamous relationship may build confidence in the sexual health, and health promotive behaviors of those in the relationship. Studies suggested that mutually monogamous partners may choose not to use condoms as evidence of their love and partner intimacy (Li, Lau, Holroyd, & Yi, 2010; Li, Wang, & Lau, 2015; Bauermeister, Ventuneac, Pingel, & Parsons, 2012). However, there was not enough evidence to confirm if monogamous partnerships lessen HIV risk (Hess, Crepaz, Rose, Purcell, & Paz-Bailey, 2017; Hoff, Chakravarty, Beougher, Neilands, & Darbes, 2012). MSM's civil status is also associated with condom use. Being single is associated with more consistent condom use while being married or partnered has been associated with an inconsistent or lower prevalence of condom use (Hill, Bavinton, & Armstrong, 2018; Sharma & Nam, 2018). Another significantly associated factor was MSM's sexual role, which is tangent to the discussion of perceived power in sexual roles. Some MSMs regard the primary distribution of power as one where penile insertive MSM are the dominant partners, structuring the rules of a sexual encounter, and anal receptive MSMs are passive partners, resigning rule over their sexual experience (Dangerfield, Smith, Williams, Unger, & Bluthenthal, 2017). This power structure can lead to discussions of other potential

psychological underpinnings of sexual positioning practices, like condom use. (Dangerfield, Smith, Williams, Unger, & Bluthenthal, 2017; Hess, Crepaz, Rose, Purcell, & Paz-Bailey, 2017)

The analysis showed Filipino MSM's educational attainment was not significantly associated with condom use at last sexual intercourse. This could be attributed to the ubiquity and effects of condom use campaigns on various platforms available (Beaudoin, Chen, & Agha, 2016). Age not having any significant association with condom use at last sexual intercourse could be attributed to many reasons, like increased condom use self-efficacy increasing with the number of encounters rather than age (Wang, Tucker, Liu, Zheng, Tang, & Ling, 2018), or other related structural barriers that may affect condom utilization (Regan & Moriskey, 2012; Lucea, Hindin, Gultiano, Kub, & Rose, 2013). Monthly income not being associated with condom use is contrary to most studies that suggest lower economic status is a barrier to condom use (Regan & Moriskey, 2012; Ubrihien, Davies, & Driscoll, 2016; Lucea, Hindin, Gultiano, Kub, & Rose, 2013; Musinguzi, Bastiaens, Matovu, & Nuwaha, 2015). This could be due to the availability of condoms in social hygiene clinics or the relatively cheap cost associated with condoms (DOH-EB, 2016).

The analysis revealed that MSM's disclosure of sexual orientation and their experiences of sexual-orientation-based stigmatization were not significantly associated with condom use at last sexual encounter. This could be due to the MSM already being in mutual understanding and acceptance of their differences in sexual orientation before engaging in sexual activity. This finding appears to be contrary to previous studies, which dictated that nondisclosure of sexual orientation and having experienced stigma based on their sexual orientation were associated with non-use of condoms, or at least lower rates of condom utilization (Baros, Sipetic Grujicic, Zikic, & Petrovic Atay, 2018; Budhwani, et al, 2017; Ganji, & Saggurti, 2017; Wang, Tucker, Liu, Zheng, Tang, & Ling, 2018). The overall knowledge or awareness of the HIV status of MSM's partners was also not significantly associated with condom use at last sex. It suggested that Filipino MSMs do not matter in the HIV status of their sexual partner/s when deciding to wear a condom or not. A systematic review suggested that good sexual negotiation and partner communication were correlated with low HIV concern (Sullivan, Lilian, Irrazabal, Villegas, Rosina, & Peragallo, 2017).

This analysis is subject to several limitations. First, owing to its cross-sectional design, there is an inability to assess the temporal precedence between the dependent variables and the use of condoms at last sex. Second, measures like their Sexual Orientation, Gender Identity, and Expression (SOGIE), civil

status, education, use of condoms at last sex are self-reported, among others, are subject to the participants' recall and social desirability bias. Third, the use of condoms at last or most recent sexual acts was studied, which may not wholly reflect an individual's behavior regarding condom use. On the other hand, condom use at last sex has been documented as a valid proxy of condom use over-time (Abara, Oraka, Jeffries, Chavez, Nasrullah, & DiNunno, 2017).

The results of this study can inform government agencies, community-based, and civil society organizations involved in HIV prevention services of the factors associated with condom use to strategically allocate and align their financial resources based on evidence. It may also serve to guide clinical health practitioners in educating MSM health-promoting behaviors by incorporating language and concepts that build on identified factors significantly associated with condom use. The results may also inform future researchers of areas they can explore and expound further or develop interventional programs that aim to improve the MSM's compliance with condom utilization.

CONCLUSION

This research showed that a substantial proportion of the online sample of Filipino MSM, have used condoms during their last sexual intercourse. MSM's decision to use condoms was associated with some psychosocial demographic factors, like civil status, gender expression, monogamy relationship, predominant sexual position, and the sexes of their sexual partners. The research also showed the utility of an online data collection strategy to reach highly stigmatized populations like MSM.

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