

ORIGINAL ARTICLE

Self-esteem and Self-efficacy Association With Condom Use among Male Who Having Sex With Male (MSM)

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ABSTRACT

Introduction: A significant increase in HIV cases among male who having sex with male (MSM) population from 2010 until 2020 has confirmed that sexual behaviour is a primary factor of exposure to sexually transmitted infections (STIs), with condom use behaviour as the dominant risk factor. This study aim to identify factors associated with consistent condom use among MSM in Sabah. **Methods:** This was a cross-sectional study carried out among MSM in Sabah. Information on sociodemographics, self-esteem, self-efficacy regarding condom use, and condom use behaviour during the last sex was collected using a Google Form survey. **Results:** The prevalence of consistent condom use during last sexual intercourse among 331 MSM was 26.3%. From the multivariate analysis, consistent condom use was associated with Chinese ethnicity (aOR = 5.557; 95% CI = 1.533 – 20.147), unmarried (aOR = 17.251; 95% CI = 6.709 – 44.355), unemployment (aOR = 8.375; 95% CI = 2.385 – 29.409), and condom use self-efficacy (aOR = 1.069; 95% CI = 1.045 – 1.094). **Conclusion:** Chinese ethnicity, unmarried, unemployment, and condom use self-efficacy were significantly related to consistent condom use among respondents. The utilization of comprehensive prevention programs, including interventions targeting psychological factors and increasing access to condoms, may promote safe sex behaviour and reduce STIs among MSM.

Keywords: Male having sex with male (MSM); Condom; Self-esteem; Self-efficacy

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INTRODUCTION

Sexually transmitted infections (STIs) have remained a paramount public health concern globally, with an estimated one million people infected with new infections every day, making up a total of about 499 million new cases of infectious diseases each year (1). Data from UNAIDS showed that out of 70,559 cases of STIs reported in Malaysia, 10,663 cases were AIDS, while more than 50,000 cases were for other STIs (2). In the year 2000, the United States National Institute of Health (NIH) produced a study that properly showed condom use was associated with effectiveness in preventing STIs transmission among men and women (3). However, it was reported that condom use among key populations especially MSM remained low in many parts of the world, including Malaysia (4). Malaysia Progress Report on HIV/AIDS 2019 showed a low prevalence of condom use among MSM during their last sexual intercourse (65.4%), while female sex worker (FSW) and transgender (TG) showed higher condom use during their last sexual intercourse, which was 83.5% and

83.3%, respectively (5).

Many factors have been identified contributing to non-condom use among MSM during sexual activities. According to a study by Koh et al., the possible reasons might be the relative inaccessibility of condoms at venues of sexual activities, lack of knowledge of the spread of STIs, lack of communication with partners regarding safe sex practices, as well as attitudinal, psychological and behavioural factors. Self-esteem can be defined as a judgment of self-worth (6). Some studies showed that a person with a higher level of self-esteem has a lower risk to involve in high-risk behaviour (7). Perceived self-efficacy was a judgment of the capability to execute given types of actions. It played a crucial role in human functioning because it affects behaviour directly and impacts other determinants (6).

By identifying factors close to the local settings, more specific intervention and prevention programs can be developed to address the ways to overcome barriers to condom use and highlight the negative results of unsafe sexual behaviour to reduce STIs transmission. Therefore, it is essential to describe and analyse the determinants of condom use among the MSM community. This study aimed to determine the prevalence of condom use and to explore the

association between psychological factors namely self-esteem and self-efficacy with the consistency of condom use among MSM in Sabah.

MATERIALS AND METHODS

This was a cross-sectional study to determine the prevalence of condom use among MSM and its association with self-esteem and self-efficacy. This study was conducted from May 2021 until July 2021 in four towns in Sabah among 331 MSM. As limited information regarding MSM in Sabah was available, a cross-sectional study enabled data on different factors to be collected at a given time that might correlate with the critical outcome of interest.

This study was conducted in Kota Kinabalu, Sandakan, Sipitang, and Tawau. The selection of these towns took into consideration the availability of NGO KASIH representatives, HIV prevalence, and the assumption that the population of MSM was higher compared to other locations.

The study population consists of the MSM group in Sabah. Snowball sampling method was employed to gather the participants. After accounting for incomplete submission and non-response rate, the sample size was inflated by 10%, and the final sample size was readjusted to 383. The inclusion criteria for the subject requirement are an individual who is a biological male and who had engaged in anal sex with a male partner (8), age 18 years old and above, and consented to participate. Transgender (TG) was not included in this study. TG was identified by NGO workers based on appearance and behaviour. TG refers to a diverse population whose gender identity or expression differs from their assigned sex at birth (8).

Snowball sampling is a non-probability sampling method that will be used in this study. This sampling method is a process in which primary data sources or seeds, are utilized to recruit other potential data sources or peers, to participate in the research study. NGO Kasih staff will be assigned to lead the sampling process in each venue. The primary data source would be among MSM registered under NGO Kasih, who consented to participate in this study. Then, these groups will provide the details of other individuals they knew, and the process continues until the target sample size for both groups is reached. In snowball sampling, the number of waves reached and the number of coupons given per recruit are not taken into account, and the number of seeds can be as large as needed (9). This method was taken given the nature of MSM groups that were hard to locate and did not want to be identified easily due to the social stigma attached to them (10)(11).

Critics of snowball sampling contend that the method

cannot guarantee the essential condition of sample diversity, which is crucial for obtaining valid research results. Etikan has asserted that the most effective strategy to counteract the deficiency in sample diversity is to initiate the sample with seeds that are as diverse as possible (12). In our research, we ensured that each seed selected from different districts exhibited diversity in terms of sociodemographics and economic status. Kirchherr & Charles' study further demonstrated the significance of having diverse initial participants to achieve sample diversity (13).

Data was collected through a questionnaire from Google Forms Survey distributed to the participants. The questionnaires were divided into three sections; (Part 1) Sociodemographic, (Part 2) Self-esteem level, and (Part 3) Condom use self-efficacy level. In terms of ethnicity, the majority of Sabah's population is made up of non-Malay Bumiputeras, primarily consisting of Kadazandusuns, Bajaus, and Muruts (14). Furthermore, non-Malaysian residents in Sabah make up 28% of the state's population, totalling 1.1 million people. Sabah accommodates the largest population of non-citizens in Malaysia, with over a third of them residing on the eastern coast of the state, which is positioned closest to the main entry points from the Philippines and Indonesia (14). In this study, we categorized ethnicity into Malay, Chinese, Indian, non-Malay Bumiputeras (Kadazandusun, Bajau, and Murut), and others (Bisaya, Sino Dusun, and non-Malaysian citizens).

This study utilized the Rosenberg Self-Esteem Scale (RSES) to measure self-esteem. RSES was frequently used among scholars because of its straightforward language and ease of use (7). It comprises ten items of statements that enquired on whether the person strongly agreed, agreed, disagreed or strongly disagreed with the statements that analysed their evaluation of themselves. In scoring the items, the positive statements were given points as follows; "Strongly Agree" (SA) = 3, "Agree" (A) = 2, "Disagree" (D) = 1 and "Strongly Disagree" (SD) = 0 while the negative statements were reversed score as follows; SA = 0, A = 1, D = 2, SD = 3. The scoring was reversed for item 8. The score for each item was then summed to get the score for overall self-esteem. The scores were interpreted to show that the higher the sum number, the higher the person's self-esteem. The Malay version of RSES was translated and validated by Swami in a study among the community in Kuala Lumpur (15). The study was internally consistent, with an alpha coefficient of .72. Permission from the author was obtained for the study.

Bandura created the concept of self-efficacy. Generally, it suggested that a person with a high level of confidence could carry out specific tasks and considered them meaningful challenges (16). The

questionnaire has 28 items that used a 5-point Likert scale response format ranging from “Strongly Disagree”, “Disagree”, “Undecided”, “Agree”, and “Strongly Agree” which are scored as 0, 1, 2, 3, 4 respectively. The scoring was reversed for items 8,9,10,15,16,17 and 18. The score for each item was summed to get a total score ranging from 0 – 112. The scores were interpreted to show that the higher the sum number, the greater the condom self-efficacy. The Malay version of CUSES (CUSES-M) was translated and validated by Ibrahim et al. in a study among STD/HIV patients in a primary care clinic in Kuala Lumpur (17). The CUSES-M retained 27 items from the original 28-item CUSES. This study showed good reliability (Cronbach’s alpha 0.848 – 0.884). Permission from the author was obtained for the study.

Concerning consistent condom use, participants had to answer questions about the latest condom use behaviour (18). The participant who answered ‘Always’ meant they used condom during their last sexual intercourse, while those who answered ‘Occasionally or not at all’ meant not using condom during their last sexual intercourse. According to Parwangsa & Bantas, MSM who used condoms during their last anal sex tended to use condoms consistently over the past month, which was influenced by positive attitudes toward HIV/AIDS information and preventive measures (19). A study by Reza et al. used both variables of condom use in the last anal sex and consistent condom use during anal sex in the previous month, which were equally significant (20). Meekers & Klein in their study, measured “always using condoms” during the last sex act as consistent condom users (21).

The total number of respondents and all variables were summarized using descriptive analysis. Normally distributed continuous variables were presented as mean and standard deviation, while categorical data were presented as frequency and percentage. The statistical analyses were performed using simple logistics regression to identify the association between sociodemographics, self-esteem, and self-efficacy with the consistency of condom use. The odds ratio was obtained and a p-value < 0.05 with a 95% confidence interval was considered a significant result. Variables that were significant in the univariate analysis were included in the multivariable logistic regression analysis. The analysis was performed using SPSS version 27.

RESULTS

The response rate among MSM was 86.4% (331/383). The proportion of consistency of condom use during the last sexual intercourse was 26.3% (87/331). The mean (standard deviation) age of the participant was 31.58 (7.34) years old. The majority of them were

employed (241/331 or 72.8%), unmarried (203/331 or 61.3%), and achieved college-level education (258/331 or 77.9%). The ethnic distribution reflected the state’s distribution in which non-Malay Bumiputeras (Kadazan Dusun, Bajau, and Murut (129/331 or 39.0%) and others (115/331 or 34.7%) were the most prominent groups, followed by Malay (44/331 or 13.3%), Chinese (28/331 or 8.5%), and Indian (15/331 or 4.5%). The mean (standard deviation) scores of self-

Table I : Distribution of participants’ characteristics by demographic, self-esteem, and self-efficacy factors

Variable	Mean (SD)	Total, n = 331 (%)
Consistency of condom use		
Always		87 (26.3)
Occasionally / not at all		244 (73.7)
Age (years)		
≤24		66 (19.9)
25 – 29		56 (16.9)
30 – 39		160 (48.3)
≥40		49 (14.8)
Ethnicity		
Malay		44 (13.3)
Chinese		28 (8.5)
Indian		15 (4.5)
Bumiputeras		129 (39.0)
Others		115 (34.7)
Education		
Below college level		73 (22.1)
College level		258 (77.9)
Faith		
Islam		173 (52.3)
Christian		124 (37.5)
Others		34 (10.3)
Marital status		
Unmarried		203 (61.3)
Currently married / ever married (divorced / widow)		128 (38.7)
Employment status		
Employed		241 (72.8)
Unemployed		32 (9.7)
Student		58 (17.5)
Age (years)	31.58 (7.34)	
Self-esteem score (RSES-M)	15.82 (3.33)	
Self-efficacy score (CUSES-M)	74.72 (19.33)	

esteem (RSES-M) and self-efficacy (CUSES-M) were 15.82 (3.33) and 74.72 (19.33), respectively (Table I).

Generally, the proportion of not using a condom was higher across all studied factors (Table II). Ethnicity was statistically significant with the consistency of condom use, where a high proportion of non-Malay Bumiputeras (Kadazan Dusun, Bajau, and Murut) (101/244 or 30.5%) and others (79/244 or 23.9%) recorded occasionally or not using a condom at all during sexual activity. Secondly, the marital status factor was associated

with consistent condom use. Unmarried and currently married/ever-married categories documented a higher proportion of not using a condom, 37.2% (123/244) and 36.6% (121/244), respectively. Employment status also showed a significant association with consistent condom use, where a majority of employed persons recorded not using a condom during sexual activity (182/244 or 55%) compared to other categories. Moreover, the self-efficacy score (CUSES-M) was associated with the consistency of condom use, while the self-esteem score (RSES-M) was not associated

Table II : Factors associated with the consistency of condom use

Variable	Condom use		
	Always, n (%)	Occasionally / not at all, n (%)	p-value
Age (years) ^a			0.958
≤24	16 (4.8)	50 (15.1)	
25 – 29	14 (4.2)	42 (12.7)	
30 – 39	44 (13.3)	116 (35.0)	
≥40	13 (3.9)	36 (10.9)	
Ethnicity ^a			0.001*
Malay	6 (1.8)	38 (11.5)	
Chinese	15 (4.5)	13 (3.9)	
Indian	2 (0.6)	13 (3.9)	
Bumiputeras	28 (8.5)	101 (30.5)	
Others	36 (10.9)	79 (23.9)	
Education ^a			0.807
Below college level	20 (6.0)	53 (16.0)	
College level	67 (20.2)	191 (57.7)	
Faith ^a			0.342
Islam	42 (12.7)	131 (39.6)	
Christian	38 (11.5)	86 (26.0)	
Others	7 (2.1)	27 (8.2)	
Marital status ^a			0.001*
Unmarried	80 (24.2)	123 (37.2)	
Currently married / ever married (divorced / widow)	7 (2.1)	121 (36.6)	
Employment status ^a			0.020*
Employed	59 (17.8)	182 (55.0)	
Unemployed	15 (4.5)	17 (5.1)	
Student	13 (3.9)	45 (13.6)	
Age ⁺	30.9 (6.64)	31.82 (7.57)	0.312
Self-esteem score (RSES-M) ⁺	16.14 (2.52)	15.70 (3.57)	0.311
Self-efficacy score (CUSES-M) ⁺	86.17 (12.54)	70.63 (19.70)	<0.001

^a analysed using Chi square test.

⁺ analysed using Independent T-test.

* valid Chi square.

with the consistency of condom use.

There was no significant association between age, education status, and the consistency of condom use (Table III). Chinese ($p = 0.001$, OR = 7.308; CI 95% = 2.344 – 22.783) and others ($p = 0.028$, OR = 2.886; CI 95% = 1.120 – 7.440) were found to have higher odds of consistency of condom use. Those who were unmarried ($p = <0.001$, OR = 11.243; CI 95% = 4.99 – 25.33) and unemployed ($p = 0.018$, OR = 3.054; CI 95% = 1.206 – 7.733) demonstrated a significant association with the consistency of condom use. Self-efficacy (CUSES-M) was directly associated with the

consistency of condom use ($p = <0.001$, OR = 1.056; CI 95% = 1.037 – 1.074), meanwhile, self-esteem (RSES-M) was not significantly associated with the consistency of condom use ($p = 0.311$). In the multivariable logistic regression analysis, consistency of condom use was significantly associated with Chinese ethnicity (aOR = 5.557; CI 95% = 1.533 – 20.147), unmarried (aOR = 17.251; CI 95% = 6.709 – 44.355), and unemployed persons (aOR = 8.375; CI 95% = 2.385 – 29.409). In addition, the self-efficacy score (CUSES-M) was directly associated with the consistency of condom use (aOR = 1.069 (CI 95% = 1.045 – 1.094).

Table III : Univariate and multivariable analysis of associated factors with the consistency of condom use.

Variable	Simple Logistic Regression	Multivariate Logistic Regression
	OR (95% CI)	OR (95% CI)
Age (years)		
≤24	1.00	
25 – 29	1.042 (0.456 – 2.380)	
30 – 39	1.185 (0.612 – 2.296)	
≥40	1.128 (0.483 – 2.635)	
Ethnicity		
Malay	1.00	1.00
Chinese	7.308 (2.344 – 22.783)*	5.557 (1.533 – 20.147)*
Indian	0.974 (0.175 – 5.440)	1.013 (0.148 – 6.942)
Bumiputeras	1.756 (0.674 – 4.574)	1.547 (0.518 – 4.619)
Others	2.886 (1.120 – 7.440)	2.902 (0.977 – 8.625)
Education		
Below college level	1.00	
College level	0.930 (0.518 – 1.668)	
Faith		
Islam	1.00	
Christian	1.378 (0.822 – 2.310)	
Others	0.809 (0.328 – 1.991)	
Marital status		
Currently married / ever married (divorced / widow)	1.00	1.00
Unmarried	11.243 (4.99 – 25.33)*	17.251 (6.709 – 44.355)*
Employment status		
Student	1.00	1.00
Unemployed	3.054 (1.206 – 7.733)*	8.375 (2.385 – 29.409)*
Employed	1.122 (0.567 – 2.223)	1.809 (0.810 – 4.039)
Self-esteem score (RSES-M)	1.040 (0.964 – 1.122)	
Self-efficacy score (CUSES-M)	1.056 (1.037 – 1.074)*	1.069 (1.045 – 1.094)*

* $p < 0.05$.

DISCUSSION

This study showed that the prevalence of consistent condom use among MSM is comparable to another Malaysian study on consistent condom use among MSM in Kuala Lumpur, which was 23.5% (4). However, the prevalence was lower compared to the survey conducted by the Ministry of Health (MOH) throughout 12 states in Malaysia, where 65.4% of MSM used condoms consistently (18). Other countries in the WHO South-East Asia region also showed a higher prevalence of condom use among MSM, ranging between 46% and 86% (4,18). Similar results have been reported from studies in Korea (46%), China (60%), and the Philippines (49.8%) (23–25). The difference between this study and the survey by MOH might be due to sociodemographic factors and engagement with prevention programs, which lead to a higher proportion of prevalence condom use among MSM in west Malaysia compared to east Malaysia.

The Chinese were the only ethnic associated with the consistency of condom use among MSM. However, limited research focused on the association between ethnicity and consistent condom use among MSM in Malaysia was available. The association of condom use among MSM who were Chinese in Sabah could be explained by a high knowledge level of STIs and the prevention methods of STIs. Previous studies showed that MSM who had more exposure to STIs programs or higher knowledge of HIV/AIDS were associated with an increased level of consistency in the behaviour of condom use (14,19,22,23). A study by Lim & Chan indicated that Malay MSM have insufficient knowledge of HIV transmission and were more likely to have been involved in unprotected sex compared to Chinese MSM (28).

Along with ethnicity, this study also indicated unmarried persons associated with consistent condom use. A previous study by Parwangsa & Bantas also found a significant association between unmarried individuals with a level of consistency in the behaviour of condom use (19). Some studies showed that friends and peer influence among young adults regarding intervention in HIV awareness was associated with positive attitudes toward condom use (21,25). Stigma and discrimination on condom usage in MSM relationships have made safer sexual behaviour to be complicated. A study in India showed that possessing condoms was a key concern, especially for someone with a certain social status, such as a father, in practising the use of condoms with male partners (30). Trust and intimacy were other factors related to the inconsistency of condom use among MSM. According to Longfield et al., the perception of condom use was unnecessary with long-term partners or couples (31).

The use of condoms suggested that one partner has been unfaithful to protect himself outside the relationship.

This study found that the unemployed person was associated with consistent condom use, as Wet-Billings & K. Billings reported in their study among MSM in South Africa (32). In contrast, this result is not compatible with an investigation by de Torres which found that more extended employment periods and higher monthly wages were consistent findings associated with facilitators of condom use among MSM (25). A previous study by Larmarange et al. indicated that unemployed individuals were associated with inconsistent condom use (33). The association between unemployment and consistency of condom use might be due to economic security and the risk of HIV infection. According to Allen et al., unemployment and lower levels of financial security were associated with condom use, given that poverty is a significant contributor to HIV infection among PLHIV in the Caribbean (34). However, it should be noted that the confidence interval (CI) is large and should be interpreted with caution.

The CUSES-M score was used to assess a person's confidence level in using a condom during sexual intercourse. This study indicated that high self-efficacy of condom use is associated with consistency of condom use. Previous studies showed that self-efficacy was a vital facilitator of consistent levels of condom use (25,30–32). However, this study could not determine whether self-efficacy is a cause or consequence of the consistency of condom use since the study design, which was cross-sectional, could not establish causality. Therefore, a longitudinal study design should be carried out to determine the contribution of this psychological influence if preventive measures are to be improved in the future.

Concerning the link between self-esteem and safe sex practices, this study showed no association between self-esteem and consistency of condom use among MSM. This result was consistent with previously documented findings which found no association between self-esteem and condom use or safe sex practices (33,34). Moreover, a study by Leffingwell et al. suggested that individuals with higher self-esteem were associated with high-risk behaviour among college students (40). This study revealed that increasing self-efficacy remains a crucial factor recommended for improving condom use among MSM.

This study was subjected to several potential biases that warrant discussions. As this study was designed as a cross-sectional study, causality cannot be established. The result of this study would be biased if participants

chose not to give factual and accurate information regarding their sexual practices and condom use behaviour. Data obtained through the use of self-report instruments were subjected to the possibility of recall bias. However, all tools used in this study were established and validated locally.

Another limitation of this study was the current COVID-19 pandemic situation which caused a potential reduction in sample size due to the restriction of daily life activities following the Movement Control Order (MCO) since March 2020. Several online meetings with NGO KASIH's representatives from other towns (Sandakan, Tawau, and Sipitang) were held to train, plan, and mobilize them in outreach activities to increase the sample size.

On the other hand, to my knowledge, this study may be the first to assess the prevalence of condom use and its association with psychological factors among MSM in Sabah. A person's self-efficacy regarding condom use can be a significant determinant of a change in safe sexual practices. High self-efficacy in condom use in MSM groups can reduce risky sexual behaviour to prevent STIs among MSM in the future.

CONCLUSION

This study indicated that the respondents who used condoms consistently were 26.3%, and those who did not were 73.7%. Variables that are significantly associated with the consistency of condom use are Chinese ethnicity, unmarried, unemployed, and self-efficacy on condom use. The non-condom-using behaviour could be improved by utilizing a person's self-efficacy on condom use. Therefore, it is expected that the psychological aspect should be integrated and continuously carried out in any prevention program, especially towards MSM groups. Workshop or seminars on knowledge of the definition of STIs, mode of transmission, risk of transmission, preventive measures, as well as trust and negotiation for condoms should be conducted routinely as it may increase the perception of safe sex practices among MSM groups and improve quality of life. Further research related to the effectiveness of this psychological intervention to increase the proportion of condom use among MSM should be considered.

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approval was obtained from Universiti Malaysia Sabah Medical Research Ethics Committee (Approval Code: JKEtika 1/12 (26)) on 30th April 2021. The researcher adhered to the principles of the Declaration of Helsinki and the Malaysian Good Clinical Practice Guidelines. Implied consent was obtained from all participants before recruitment in the study. No conflict of interest exists within the research team. The researchers themselves funded the research.

REFERENCES

1. WHO WHO. Baseline report on global sexually transmitted infection surveillance 2012. 2012;
2. Folasayo AT, Oluwasegun AJ, Samsudin S, Saudi SNS, Osman M, Hamat RA. Assessing the knowledge level, attitudes, risky behaviors and preventive practices on sexually transmitted diseases among university students as future healthcare providers in the central zone of Malaysia: A cross-sectional study. *Int J Environ Res Public Health*. 2017;14(2):1–14.
3. Holmes KK, Levine R, Weaver M. Effectiveness of condoms in preventing sexually transmitted infections. *Bull World Health Organ*. 2004;82(6):454–61.
4. Koh KC, Kanagalingam K, Tai FT, Kamarulzaman A. Sexual Practices and HIV Prevalence amongst Men Who Have Sex with Men at a Community-Based Voluntary Counseling and Testing Centre in Malaysia. *ISRN Infect Dis*. 2013;2013:1–6.
5. Anita S, Chai PT. Country Progress Report on HIV / AIDS Response 2019 Malaysia. *HIV/STI/Hepatitis C Sect Minist Heal Malaysia*. 2019;(March):42.
6. Leo Marcos F, Sánchez Miguel P, Sánchez Oliva D, Gómez Corrales F, García Calvo T. Análisis de las relaciones existentes entre la orientación y el clima motivacional con los comportamientos antisociales en jóvenes deportistas. *Análisis las Relac Exist entre la Orientación y el Clima Motiv con los comportamientos antisociales en jovenes Deport*. 2009;4(1):15–28.
7. Mullan E. Self-esteem and health-risk behaviours : Is there a link ? E . Mullan Department of Health Promotion Distillery Road NUI Galway Galway. 2013;(January 2003).
8. Teo A, Prem K, Cook A. Size estimation of key populations for HIV in Malaysia. *NUS Staff Res Rounds*. 2017;
9. Rao A, Stahlman S, Hargreaves J, Weir S, Edwards J, Rice B, et al. Sampling key populations for HIV surveillance: Results from eight cross-sectional studies using respondent-driven sampling and venue-based snowball sampling. *JMIR Public Heal Surveill*. 2017;3(4).
10. Deuba K, Karki DK, Shrestha R, Aryal UR, Bhatta L, Rai KK. Risk of HIV infection among men having

- sex with men in Kathmandu valley, Nepal. *Asia-Pacific J Public Heal*. 2014;26(2):126–37.
11. Sadler GR, Lee H, Lim RS-H, Fullerton J. Recruiting hard-to-reach United States population sub-groups via adaptations of snowball sampling strategy. *Heal (San Fr)*. 2010;12(3):369–74.
 12. Etikan I. Comparison of Snowball Sampling and Sequential Sampling Technique. *Biometrics Biostat Int J*. 2016;3(1):7–8.
 13. Kirchherr J, Charles K. Enhancing the sample diversity of snowball samples: Recommendations from a research project on anti-dam movements in Southeast Asia. *PLoS One*. 2018;13(8):1–17.
 14. Somiah V. SABAH ' S UNRELENTING EXCLUSIONARY AND INCLUSIONARY POLITICS. 2021;(334).
 15. Swami V. FURTHER EXAMINATION OF THE PSYCHOMETRIC PROPERTIES OF A MALAY VERSION OF THE ROSENBERG SELF-ESTEEM SCALE. *Handb Psychol self-esteem*. 2011;371–80.
 16. Rapelang Chilisa RC. Self-efficacy, Self-esteem and the Intention to Practice Safe Sex among Batswana Adolescents. *IOSR J Humanit Soc Sci*. 2013;9(2):87–95.
 17. Ibrahim N, Badlishah-Sham SF, Nasir NM, Yusof FM. Adaptation, translation and validation of the condom use self-efficacy scale (CUSES) Malay version among STD/HIV patients in primary care. *Malaysian J Med Heal Sci*. 2020;16(4):21–8.
 18. Disease Control Division MOH. Malaysia: Integrated Biological and Behavioral Surveillance Survey 2017. 2019;
 19. Parwansa NWPL, Bantas K. Determinants of Condom Use Status among Men Who Have Sex with Men (MSM) Group in 5 Indonesian Cities in 2015. *GHMJ (Global Heal Manag Journal)*. 2019;3(2):72.
 20. Reza MM, Rana AKMM, Azim T, Chowdhury EI, Gourab G, Imran MS Al, et al. Changes in condom use among males who have sex with males (MSM): Measuring the effect of HIV prevention programme in Dhaka city. *PLoS One [Internet]*. 2020;15(7 July):1–15. Available from: <http://dx.doi.org/10.1371/journal.pone.0236557>
 21. Meekers D, Klein M. Determinants of condom use among young people in urban Cameroon. *Stud Fam Plann*. 2002;33(4):335–46.
 22. Pendse R, Gupta S, Yu D, Sarkar S. HIV/AIDS in the South-East Asia region: progress and challenges. *J Virus Erad*. 2016;2(Supplement 4):1–6.
 23. Sohn A, Cho B. Knowledge, Attitudes, and Sexual Behaviors in HIV/AIDS and Predictors Affecting Condom Use among Men Who Have Sex with Men in South Korea. *Osong Public Heal Res Perspect [Internet]*. 2012;3(3):156–64. Available from: <http://dx.doi.org/10.1016/j.phrp.2012.07.001>
 24. Hu L, Luo Y, Zhong X, Lu R, Wang Y, Sharma M, et al. Condom Use and Related Factors among Rural and Urban Men Who Have Sex With Men in Western China: Based on Information-Motivation-Behavioral Skills Model. *Am J Mens Health*. 2020;14(1):1–10.
 25. de Torres RQ. Facilitators and barriers to condom use among Filipinos: A systematic review of literature. *Heal Promot Perspect*. 2021;10(4):306–15.
 26. Manuscript A, Self-efficacy DSS, Men H. Transmission Risk Beliefs Differ among Men who have Sex with. 2014;17(5):1873–82.
 27. Diiorio BC, Dudley WN, Lehr S, Soet JE, Dudley WN, Lehr S, et al. Correlates of safer sex communication among college students. 2000;32(3):658–65.
 28. Lim SH, Chan R. HIV infection among men who have sex with men in East and South-East Asia time for action. *Sex Health*. 2011;8(1):5–8.
 29. Mcdonough N. Factors Influencing Sexual Behavior Among HIV Positive Men Who Have Sex With Men. 2012;
 30. Chakrapani V, Boyce P, Newman PA, Kavi AR. Contextual influences on condom use among men who have sex with men in India : subjectivities , practices and risks Author (s): Venkatesan Chakrapani , Paul Boyce , Peter A . Newman and Ashok Row Kavi Stable URL : <https://www.jstor.org/stable/24741222> C. 2013;15(7):938–51.
 31. Longfield K, Astatke H, Smith R, McPeak G, Ayers J. Men who sex with men in Southeastern Europe: Underground and at increased risk for HIV/STIs. *Cult Heal Sex*. 2007;9(5):473–87.
 32. Wet-Billings N De, K. Billings B. The levels and factors associated with inconsistent condom use among young males with older, same-sex partners in South Africa. *Cogent Soc Sci [Internet]*. 2020;6(1). Available from: <https://doi.org/10.1080/23311886.2020.1733245>
 33. Larmarange J, Wade AS, Diop AK, Diop O, Gueye K, Marra A, et al. Men who have sex with men (MSM) and factors associated with not using a condom at last sexual intercourse with a man and with a woman in senegal. *PLoS One*. 2010;5(10).
 34. Allen CF, Simon Y, Edwards J, Simeon DT. Factors associated with condom use: Economic security and positive prevention among people living with HIV/AIDS in the Caribbean. *AIDS Care - Psychol Socio-Medical Asp AIDS/HIV*. 2010;22(11):1386–94.
 35. Huang Y, Yu B, Jia P, Wang Z, Yang S, Tian C, et al. Association between Psychological Factors and Condom Use with Regular and Nonregular Male Sexual Partners among Chinese MSM: A Quantitative Study Based on the Health Belief Model. *Biomed Res Int*. 2020;2020(2007).
 36. Outlaw A. Predictors of Condom Use in a Multisite Study of High-Risk Youth Living with NIH Public

- Access. 2010;(May 2014).
37. Godin G, Kok G, Otis J. Determinants of condom use among HIV-positive men who have sex with men Determinants of condom use among HIV-positive men who have sex with men. 2011;(May 2014).
 38. Malonzo EM. Relationships among Sexual-Esteem, Sexual Self Efficacy and Sexual Risk Cognitions of Men Who have Sex with Men (MSM) in Davao City. 2012;1.
 39. Klein H, Kirk W, Elifson, Claire E. Sterk. Self-Esteem and HIV Risk Practices among Young Adult "Ecstasy" Users. 2013;42(4):447–56.
 40. Leffingwell TR, Wagner EF, Mignogna J. Self-esteem and gender influence the response to risk information among alcohol using college students Self-esteem and gender influence the response to risk. 2009;(November).