# ORIGINAL ARTICLE

# Adaptation, Translation and Validation of the Condom Use Self-Efficacy Scale (CUSES) Malay Version Among STD/HIV Patients in Primary Care

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## ABSTRACT

**Introduction:** Consistent condom use can reduce the rate of transmission of STD/HIV. Condom self-efficacy is an important determinant of consistent condom use. The Condom Use Self-Efficacy Scale (CUSES) assesses the individual's confidence and expectations to obtain, use, dispose and negotiate use of condom with their sexual partners. This study aimed to adapt, translate and determine the validity and reliability of CUSES Malay version among STD/HIV patients in a primary care clinic. **Methods:** This was a cross sectional validation study conducted among STD/HIV patients in a primary care clinic. The CUSES Malay version underwent content validation (calculation of I-CVI), forward and backward translation, face validation and field testing for psychometric analysis. Psychometric analysis used included Principal Axis Factoring with direct oblimin rotation, internal consistency reliability (Cronbach's α) and test-retest reliability analyses (Intraclass Correlation (ICC)). **Results:** A total of 168 participants were enrolled into this study (99% response rate). In content validation, all items were retained as the I-CVI were >1.00. Feedback from face validation resulted in simpler phrases of some items. One item (B2) was removed due to poor factor loading of <0.3. This resulted in 27 items framed within four factors. These factors were identified as Mechanics, Perceived Barriers, Assertiveness and Intoxicants. Reliability analysis achieved an overall Cronbach's α of 0.878 and ICC >0.4. **Conclusion:** The CUSES-M is a valid, reliable and stable tool to measure condom use self-efficacy among STD/HIV patients in primary care.

**Keywords:** Condoms, Self Efficacy, Translations, Psychometrics, HIV

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## INTRODUCTION

The global burden of sexual transmitted diseases (STDs) remains high. An estimated 1 million new cases of chlamydia, gonorrhoea, syphilis and trichomoniasis were reported per day in 2016 by the World Health Organization(WHO)(1). In Malaysia, there were more reported cases of gonorrhoea and syphilis detected in males with <10% active syphilis detected among Female Sexual Worker (FSW). The HIV epidemic in Malaysia is more concentrated among high risk key populations of People Who Inject Drugs (PWID), Transgender (TG), FSW and Men who have Sex with Men (MSM)(2). However, since 2011, there has been a shift in trend of mode of transmission for HIV from PWID to sexual transmission(2). Furthermore, new HIV infections are reported highest among MSM of ages 20 to 39 years old in 2017.

The best reliable methods to avoid transmission of STDs are abstinence from any sexual activity or staying faithful in a long-term mutually monogamous relationship with an uninfected partner(3). However, intervention programs that only focused on targeting avoidance of high risk behaviour and abstinence alone did not reduce the transmission of HIV among the population(4). Programs that incorporated abstinence-plus education that includes information on abstinence, condom use and contraception effectively increased knowledge, reduced pregnancy rates and decreased the incidence of unprotected sex(5). Consistent and correct use of condoms effectively decreased sexual transmission of HIV and other STDs up to 80%(6-8). The key populations in Malaysia reported using condoms with their most recent partner were FSW(83.5%), TG(78.2%), MSM(65.4%) and PWID(25.7%). However, this data did not measure consistent condom use which is pivotal in prevention of STD and HIV.

Various behaviour theories have been studied to determine the motivator and barriers of condom use. These include behavioural models such as the Health

Belief Model theory(9), Theory of Reasoned Action(10) and the Self-Efficacy theory(11). Cost, moral values, stigma, lack of communication between partners, use of alcohol and drugs have been identified as barriers of condom use(12). On the other hand, self-efficacy has shown a positive correlation with condom use and can be used to predict consistent condom use among key populations (13).

The concept of self-efficacy was introduced by Bandura and is defined as expectations of an individual's ability to perform a specific task(14). This concept stems from a few main sources which are mastery experiences, vicarious experiences and verbal persuasion by influential people in individual's life and physiological and emotional states. Individuals who perceived they had high self-efficacy were more likely to perform a specific behaviour. Therefore, this concept hypothesized that an individual who has high self-efficacy in condom use will practice safer sex by consistent condom usage (15).

Ascertaining self-efficacy of condom usage amongst HIV and STD patients is important to identify individuals with low self-efficacy who may be at higher risk of transmitting HIV and STDs. Interventions such as counselling, increasing awareness and knowledge to increase condom self-efficacy can then be applied. The Condom Use Self-Efficacy Scale (CUSES) was first developed by Brafford and Beck as part of an HIV prevention programme among adolescents to measure their confidence in obtaining, using, negotiating and appropriate disposing of condoms(16). It is a self-administered questionnaire of 28-items with good internal consistency and test-retest reliability. It has subsequently been translated and validated in various languages (17, 18).

To date, self-efficacy in condom usage among HIV and STD patients has never been studied in the Malaysian context. The Malay language is regarded as the national language in the Malaysian Constitution and is the most widely spoken language in the country(19). In addition, the highest number of reported new HIV cases are of Malay ethnicity(20). Therefore, there is a need for a study tool available in the Malay language.

As there is currently no available validated and reliable tool in the Malay language to measure self-efficacy of condom use, this research gap led us to this study which aims to adapt and translate the original CUSES from English language into the Malay language and determine its validity and reliability. This tool can be used in the local Malaysian setting to gain an understanding of self-efficacy of condom usage among HIV and STD patients to reduce the risk of transmission of STD and HIV and guide clinicians in clinical practice.

## MATERIALS AND METHODS

### Study design
This study was a cross -sectional study conducted in three phases with adaptation and translation of the CUSES English language to Malay language in Phase 1. This was followed by Phase 2 in which face validation of CUSES Malay version was conducted. The final Phase 3 was the field testing for psychometric analysis of CUSES Malay version. Several guidelines were used in the cross-cultural adaptation process (21-25). The outline of this study is shown in Fig.1.
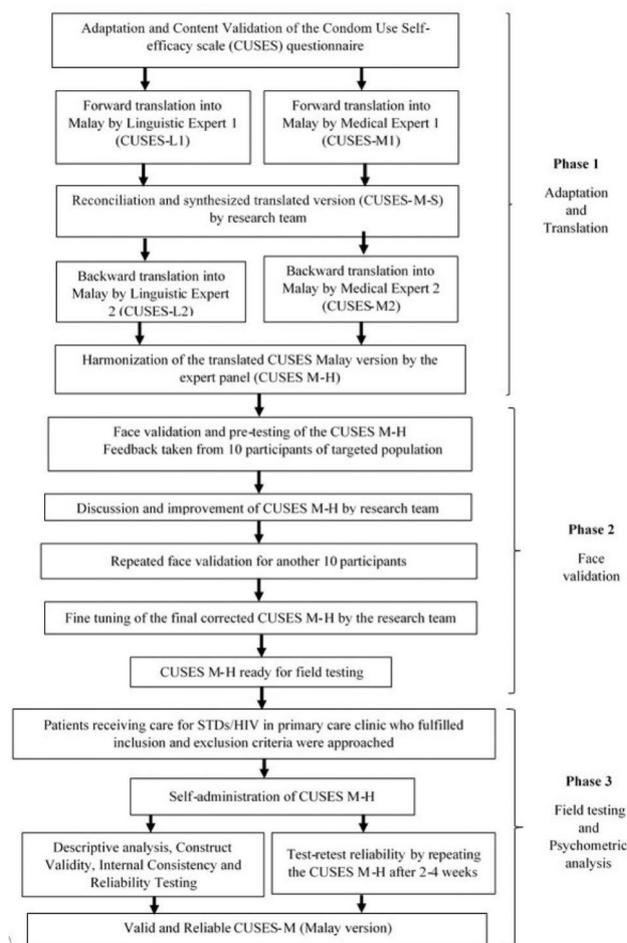


**Figure 1: Overview of the study procedure**

### Study tool
The Condom Use Self-Efficacy Scale (CUSES) was developed in 1991 by Brafford and Beck to measure adolescents' confidence in correctly using the condom and negotiating its use during sexual intercourse(16). The initial development of CUSES revealed it had 28 items framed within 15 factors. The questionnaire was developed using English speaking American population adolescent age language. It has 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. The scoring is reversed on items 8,9,10,15,16,17 and 18. The scores for each item are then summed yielding a total score ranging from 0-112. The higher the scores indicates greater condom self-efficacy. CUSES is a reliable and stable tool with Cronbach's α of 0.91 and test-retest reliability of 0.81. Later, Barkeley et al found that CUSES revealed four factors extracted and labelled as 'Mechanics', 'Partner's Approval', 'Assertiveness' and 'Intoxicants' (26). Permission from the original author of CUSES was obtained for the study.

**Study Procedure**
In Phase 1, the original 28-items of CUSES English version was reviewed by five experts in the field of STD and questionnaire validation for conceptual and item equivalence. The expert panel consisted of an Infectious Disease physician, an FMS who has a special interest in STD/HIV and runs the STD clinic in primary care, two FMS and a Public Health Specialist who were experienced in questionnaire validation studies. Each expert rated all the items objectively using a 4-point scale of Not Relevant =1, Need some revision=2, Need minor revision=3, Very relevant =4 to calculate the Item-Content validity Index (I-CVI)(27). Items with I-CVI values >0.8 were retained. All the experts agreed with all the suggested items for content validity and thought the items were appropriate and relevant with the expected constructs. The calculated I-CVI for all items of the CUSES were 1.0. The CUSES subsequently underwent the translation process. Forward and backward translation of the original English to Malay language were done by bilingual experts (language and medical experts) according to established cross cultural and translation guidelines to produce CUSES L1, M1, L2 and M2 (21-23, 28). The research team then harmonized the forward and backward translation to produce the harmonised Malay version of CUSES (CUSES M-H).

In Phase 2 of the study, the CUSES M-H version underwent face validation twice on the target population. Participants were recruited among patients with STD or HIV in a primary care clinic. The inclusion criteria included STD/HIV patients aged >18 years old, had experienced sexual intercourse and were able to read, speak and understand the Malay language. Patients who have never heard or do not know about condoms were excluded from the study. The purpose of the face validation was for the participants to evaluate the CUSES M-H version's content, terminology, directions and general structure. They were asked to comment on the content of items and to recommend suitable phrases to suit the culture and understanding.

The face validation process involved patients with STD/HIV from a multi-ethnic background which included Malay (70%), Chinese (15%), Indian (10%) and Bumiputera from Sarawak (5%) participants. All the participants were male and most attained formal education in university (85%) while the remaining participants attained education until SPM level. The diversity in the background of patients reflected the population attending the HIV/STD clinic where data was collected. During the first round of face validation among ten participants, they found the questionnaire was too long and was difficult to understand especially if they have not been currently sexually active for a long time. Based on the feedback, the wording in the items were simplified from 'feels confident' to 'confident' in the Malay version. All STD patients who were not currently sexually active were asked to imagine the responses or planning of condom usage or preferences regardless of their current sexual status. Therefore, they were asked to visualize themselves as if they are using a condom. The revised version of CUSES M-H underwent a second face validation with another ten participants. The feedback received showed that the CUSES M-H did not require any further amendments. In general, participants from the second round of face validation found the wording of items easy to understand and thus did not find the questionnaire too long to complete. The findings of this face validation process was comparable to the development of the original CUSES in which participants took around 20 minutes to complete the questionnaire and feedback during their face validation was that the questionnaire was too long. These participants who were involved in the face validation of phase 2 were not recruited for the psychometric analysis in field testing of Phase 3.

In Phase 3 of the study, the CUSES M-H underwent field testing for psychometric analysis on STD/HIV patients attending a primary care clinic with the same inclusion and exclusion criteria applied. The sample size for psychometric analysis was calculated using the subject to variable ratio (SVR)(29). In this study, an SVR ratio of 5:1 was used for the CUSES with 28-items. Therefore, the minimum sample size required was 140. After consideration of a 20% non-respondent rate, the sample size aimed for this study was 168 participants.

Recruitment of STD/HIV participants was through convenience sampling from the clinic due to time constraint for data collection. Participants that fulfilled the inclusion and exclusion criteria were approached, briefed about the study objectives and procedure individually. A patient information sheet was also given to participants for further details regarding the study and their right for confidentiality was explained. Participants who agreed to join the study signed the consent form before proceeding with the questionnaire. The demographic data section of the questionnaire was collected via face-to-face interview. The participants were then given 10 to 15 minutes to complete the self-administered CUSES M-H version. Instructions to circle the choices that matched them well were given verbally by the primary researcher and they were advised to seek clarification

at any time should queries arise. The researcher then checked the questionnaires for completeness before the participants left the clinic. If any incomplete answers were noticed, the participant was kindly requested to fill in the sections. They were also reminded to answer the questions independently without seeking help from doctors or friends. All participants were given a specified date for them to return to the clinic in two to four weeks' time to complete the same questionnaire.

## Statistical Analysis

The data entry and statistical analysis were conducted using IBM SPSS Statistics Version 23. During the data entry, negatively phrased items for 8,9,10,15,16,17 and 18 responses on Likert Scale were reversed. Descriptive analysis for categorical data were presented as frequency and percentages. The normally distributed continuous data were described in mean and standard deviation, while any non-normally distributed continuous data were described in median and interquartile range (IQR).

The Kaiser-Meyer-Olkin (KMO) test assessed the sampling adequacy and is recorded at a range of 0 to 1 with values of >0.5 considered as adequate sampling. The appropriateness of the data to proceed with Exploratory Factor Analysis (EFA) was assessed by Bartlett's sphericity test with a significant p-value of <0.05 (30). The CUSES M-H was assessed using Principal Axis Factoring (PAF) and direct oblimin rotation.

Reliability analysis of CUSES M-H was measured by determining the internal consistency reliability analysis for Cronbach's α coefficients. A reliable Cronbach's alpha coefficient of >0.7 was aimed. This study also conducted a test-retest reliability testing by measuring the intraclass correlation coefficients (ICC). Values >0.8 indicates that the items were reproducible and stable over time (31).

## Ethical Approval

This research attained ethical approval from the National Medical Research Register (NMRR-18-1937-42076(IIR)), Medical Ethics and Research Committee (MREC) and UiTM Research Ethics Committee [600-IRMI(5/1/6)REC/298/18]. Permission from the Public Health Unit, Jabatan Kesihatan Negeri Selangor (JKNS) to use the ministry facilities was also obtained. The Family Medicine Specialist (FMS) at an urban healthcare clinic was approached for permission to collect data at the OPD and STD clinic following the approval from the NMRR ethics committee.

## RESULTS

## Descriptive Analysis

A total of 170 patients were approached and 168 eligible patients completed the survey giving a response rate of 99%. Most of the participants were male (95.8%) with a median age of 28 years old (IQR 6). The majority of

participants were Malay (88.7%) followed by Bumiputera (4.2%), Chinese (3.6%) and Indian (3.6%). Most of the participants were single (91.1%) and attained formal education in university (82.1%). Two-thirds (60%) of the participants has not been sexually active within the past three months. A majority of the participants practiced oral sex (62.5%) followed by anal receptive (42.3%), anal insertive (37.5%) and vagina (34.5%) sexual practice. Among the participants, slightly more than half (59.5%) were homosexual, a quarter were bisexual (23.8%) and the remaining (16.7%) were heterosexual. The demographic characteristics of the participants are shown in Table I.

**Table I: Sociodemographic data of participants**

| | | Study Sample N (%) | Median (IQR) |
|---|---|---|---|
| Age | | | 28(6) |
| Gender | Male | 161 (95.8) | |
| | Female | 6 (3.6) | |
| | Transgender | 1 (0.6) | |
| Race | Malay | 149 (88.7) | |
| | Chinese | 6 (3.6) | |
| | Indian | 6 (3.6) | |
| | Others | 7 (4.2) | |
| Religion | Islam | 155 (92.3) | |
| | Christian | 3 (1.8) | |
| | Buddha | 4 (2.4) | |
| | Hindu | 5 (3.0) | |
| | Others | 1 (0.6) | |
| Personal Status | Single | 153 (91.1) | |
| | Married | 13 (7.7) | |
| | Divorcee/Widow | 2 (1.2) | |
| Education Level | No Formal Education | 1 (0.6) | |
| | Primary School | 3 (1.8) | |
| | Secondary School | 21 (12.5) | |
| | Pre-university | 5 (3.0) | |
| | University | 138 (82.1) | |
| Sexually active within past 3 months | Yes | 67 (39.9) | |
| | No | 101 (60.1) | |
| Type of Sexual Practice: | | | |
| 1. Vagina | | 58 (34.5) | |
| 2. Oral | | 105 (62.5) | |
| 3. Anal Insertive | | 64 (38.1) | |
| 4. Anal Receptive | | 71 (42.3) | |
| Sexual Orientation | Homosexual | 100 (59.5) | |
| | Heterosexual | 28 (16.7) | |
| | Bisexual | 40 (23.8) | |
| Alcohol Consumption | Yes | 37 (22.0) | |
| | No | 131 (78.0) | |
| Illicit Drug Consumption | Yes | 29 (17.3) | |
| | No | 137 (81.5) | |

## Psychometric Analysis

The sample size for this study was adequate supported by the high Kaiser-Meyer-Olkin (KMO) value of 0.855 with a significant p-value <0.05 of Bartlett's test of sphericity. Both these values indicate that this data set was suitable to proceed for further factor analysis. All 28-items in CUSES M-H underwent Exploratory Factor Analysis (EFA) and the values of inter-item correlation between the all items were above 0.3.

The Principal Axis Factoring (PAF) of the first run through the Kaiser Criterion displayed seven factors

which demonstrated eigenvalues of ≥1 accounting for 59.22% of the total variance. The scree plot shows the elbow of the curve occurring at three. Therefore, based on the Eigenvalues and the scree plot, the number of factors suggested to be retained could be between two to seven factors. A four-factor solution with direct Oblimin rotation was inclined to be the most conceptually appropriate for CUSES M-H version among the two to seven factors examined. Therefore, the data was re-analysed by setting the number of factors to four.

By fixing the PAF at four factors, one item, B2 was dropped due to poor factor loading of <0.3 following rotation. Therefore, a total of 27 items framed within four-factors were retained for final run on PAF resulting in 51.17% of total variance explained. Table II shows the factor loadings on the final run of four factors labelled as mechanics, perceived barriers, assertiveness and intoxicants.

The overall reliability analysis revealed a Cronbach's α coefficient of 0.878 for CUSES M-H. The individual Cronbach's α coefficient for each of the factors is: mechanics (0.884), perceived barriers (0.848), assertiveness (0.877) and intoxicants (0.686) which showed acceptable internal consistency. Out of the 168 participants who completed the CUSES questionnaire, 30 (20%) participants returned to the clinic for retesting at two to four weeks interval. By using single-measurement, absolute-agreement, two-way mixed effects model, the intraclass correlation coefficient (ICC) of test-retest reliability at 95% confident interval (CI) showed moderate to excellent reliability for all items except for B5 which had a value of <0.4 indicating poor reproducibility of this item only(31) . This demonstrates that overall, CUSES Malay version is stable and reliable over time. The reliability analysis is shown in Table III.

## DISCUSSION

To the best of our knowledge, this is the first validation study of a tool to assess self-efficacy of condom use

**Table II: Factor loadings on the final four factor solution after rotation using principal axis factoring with direct oblimin rotation**

| Coding | Item | Factor 1 Mechanics | Factor 2 Perceived Barriers | Factor 3 Assertiveness | Factor 4 Intoxicants |
|---|---|---|---|---|---|
| B1 | I feel confident in my ability to put a condom on myself or my partner. | 0.491 | | | |
| B3 | I feel confident I could remember to carry a condom with me should I need one | 0.447 | | | |
| B7 | I feel confident in my own or my partner ability to maintain an erection while using a condom | 0.585 | | | |
| B11 | I feel confident in my ability to use a condom correctly | 0.728 | | | |
| B14 | I feel confident I could gracefully remove and dispose of a condom after sexual intercourse | 0.620 | | | |
| B20 | I feel confident in my ability to incorporate putting a condom on myself or my partner into foreplay | 0.574 | | | |
| B21 | I feel confident that I could use a condom with a partner without "breaking the mood." | 0.533 | | | |
| B22 | I feel confident in my ability to put a condom on myself or my partner quickly | 0.724 | | | |
| B23 | I feel confident I could use a condom during intercourse without reducing any sexual sensations | 0.484 | | | |
| B27 | I feel confident that I could use a condom successfully | 0.835 | | | |
| B8 | I would feel embarrassed to put condom on myself or my partner. | | 0.618 | | |
| B9 | If I were to suggest using a condom to a partner, I would feel afraid that he or she would reject me | | 0.573 | | |
| B10 | If I were unsure of my partner's feelings about using condoms, I would not suggest using one. | | 0.596 | | |
| B15 | If my partner and I were to try to use a condom and did not succeed, I would feel embarrassed to try to use one again (e.g., not being able to unroll condom, putting it on backwards or awkwardness). | | 0.667 | | |
| B16 | I would not feel confident suggesting using condoms with a new partner because I would be afraid he or she would think I've had a past homosexual experience | | 0.756 | | |
| B17 | I would not feel confident suggesting using condoms with a new partner because I would be afraid he or she would think I have a sexually transmitted disease. | | 0.776 | | |
| B18 | I would not feel confident suggesting using condoms with a new partner because I would be afraid he or she would think I thought they had a sexually transmitted disease | | 0.606 | | |
| B4 | I feel confident in my ability to discuss condom usage with any partner I might have. | | | 0.470 | |
| B5 | I feel confident in my ability to suggest using condom with a new partner | | | 0.726 | |
| B6 | I feel confident I could suggest using a condom without my partner feeling "diseased | | | 0.779 | |
| B12 | I would feel comfortable discussing condom use with a potential sexual partner before we ever had any sexual contact (e.g., hugging, kissing, caressing, etc.) | | | 0.779 | |
| B13 | I feel confident in my ability to persuade a partner to accept using a condom when we have intercourse | | | 0.622 | |
| B19 | I would feel comfortable discussing condom use with a potential sexual partner before we ever engaged in intercourse | | | 0.470 | |
| B26 | If my partner didn't want to use a condom during intercourse, I could easily convince him or her that it was necessary to do so. | | | 0.862 | |
| B24 | I feel confident that I would remember to use a condom even after I have been drinking. | | | | 0.810 |
| B25 | I feel confident that I would remember to use a condom even if I were high. | | | | 0.792 |
| B28 | I feel confident I could stop to put a condom on myself or my partner even in the heat of passion | | | | 0.310 |

**Table III: Intraclass Correlation and Cronbach's α for each factor and overall for CUSES-M Questionnaire**

| Factor | Item | ICC (Item) | Cronbach's α for each factor | Total Cronbach's α |
|---|---|---|---|---|
| Mechanics | B1 | 0.726 (0.502-0.859) | 0.884 | |
| | B3 | 0.590 (0.304-0.781) | | |
| | B7 | 0.863 (0.733-.932) | | |
| | B11 | 0.851 (0.711-0.926) | | |
| | B14 | 0.743 (0.526-0.869) | | |
| | B20 | 0.850 (0.708-0.926) | | |
| | B21 | 0.935 (0.868-0.969) | | |
| | B22 | 0.895 (0.792-0.949) | | |
| | B23 | 0.918 (0.834-0.960) | | |
| | B27 | 0.840(0.693-0.920) | | |
| Perceived Barriers | B8 | 0.840(0.693-0.920) | 0.848 | 0.878 |
| | B9 | 0.672 (0.422-0.828) | | |
| | B10 | 0.672 (0.422-0.828) | | |
| | B15 | 0.839 (0.691-0.920) | | |
| | B16 | 0.815 (0.647-0.908) | | |
| | B17 | 0.989 (0.977-0.995) | | |
| | B18 | 0.975(0.946-0.988) | | |
| | B4 | 0.850 (0.708-0.926) | | |
| | B5 | 0.469 (1.30-0.708) | | |
| | B6 | 0.693 (0.446-0.842) | | |
| Assertiveness | B12 | 0.944 (0.880-0.974) | 0.877 | |
| | B13 | 0.968 (0.933-0.984) | | |
| | B19 | 0.894 (0.788-0.948) | | |
| | B26 | 0.894 (0.788-0.948) | | |
| | B24 | 0.764(0.560-0.880) | | |
| Intoxicants | B25 | 0.764(0.560-0.880) | 0.686 | |
| | B28 | 0.894 (0.790-0.948) | | |

among STD/HIV patients in a primary care clinic in Malaysia. The cross-cultural adaptation, translation and validation of the original CUSES English version into the CUSES Malay version (CUSES-M) had undergone a thorough process according to established guidelines(23, 28, 32, 33). CUSES-M through PAF with direct oblimin rotation extracted four factors that was consistent with the underlying conceptual framework which explained the total variance of 51.17% of the remaining 27 items. It also has good overall internal consistency of 0.878 for the questionnaire with Cronbach's α values of 0.884, 0.848, 0,877 and 0.686 for factors one, two, three and four respectively.

CUSES-M retained 27 items from the original 28-item CUSES developed by Bradford and Beck framed within four factors which were mechanics, perceived barriers, assertiveness and intoxicants. Moreover, the items that loaded onto each of the factors were almost similar between the CUSES validated by Barkley et al and CUSES-M which indicates a similar cultural perception with regards to self-efficacy of condom usage among our study population with the young adults studied by Barkley et al (26). The reliability of each factor in CUSES-M was comparable to the other studies (Cronbach's α in CUSES-M: 0.848 – 0.884 compared to 0.78-0.9 in other CUSES versions) (16-18,26).

The first factor of CUSES-M "Mechanics" had similar items loaded onto it when compared with the factor "Mechanics" by Barkley et al and was closely linked to the factor "Appropriateness" found in the CUSES-G which was validated among university students in Ghana (17,26). However, one item (I would feel embarrassed to put a condom on myself or my partner) which loaded onto the "Appropriateness" factor of the CUSES-G loaded onto the second factor "Perceived barriers" in the CUSES-M. This factor reflected the participants' perceived self-efficacy in the skills of obtaining, appropriate condom usage and disposal of themselves or their partner.

The second factor noted in CUSES-M was labelled as "Perceived barriers" which is similar to the factor called "STDs" in CUSES-G and Barkley and Burn as well as the factor "Partner disapproval" by Brien et al (17, 26). It was suggested by Barkley and Burn that the items which loaded onto this factor involved perceived fear that may trigger the physiological feedback component of self-efficacy (26). The items in this factor are strongly related to reduced self-confidence and fear of rejection with their partners concerning condom usage as well as stigma towards STDs.

The third factor found in this study is consistent with the factor "Assertiveness" noted in other studies in which the items loading onto it were related to self-efficacy of assertiveness, having the ability and skills to negotiate usage of condoms with their partners (17,26). The emergence of this factor in CUSES-M reflects the confidence among Malaysian HIV/STD patients to persuade and negotiate condom use with their partners which is similar to their American and Ghanaian counterparts. This is an encouraging finding as the Malaysian culture traditionally observes a conservative and religious approach with regards to sexuality and sexual practices out of wedlock. Meanwhile in Ethiopia, the assertive factor was not found in their study suggesting maintenance of a strong conservative religious and cultural environment against the acquisition, possession and application of condoms (18).

The final factor is called "Intoxicants" which is indicative of the ability of the participants to use condoms while being under the influence of alcohol or drugs without reduced sexual sensation. The items in this factor was similar to the factors "intoxicants" found in other studies (17, 26).

Given these findings, the CUSES-M is considered a valid and reliable instrument in assessing self-efficacy of condom use among STD/HIV in Malay speaking patients. This is important to promote practice of safe sex as a means of reducing STD/HIV transmission via sexual transmission. CUSES-M can aid health professionals or educators to design a training program to increase self-efficacy on condom use among STD/HIV patients. The limitation of this study is that the tool can only be utilized

for those who are able to speak and understand formal Malay language and may not be able to represent the cultural diversity of Malaysians in non-Malay speaking groups such as the Chinese and Indian population.

For future research, a more detailed analysis with Confirmatory Factor Analysis (CFA) with larger population in multiple clinic settings to study the structured equation modelling could enhance generalizability of the questionnaire. Based on the original CUSES, the higher the condom use self-efficacy score would predict a higher self-efficacy towards condom usage. The total scoring validity was not done in this current study; thus, another study should be carried out to validate the scoring and its predictive values for the Malaysian population.

## CONCLUSION

The Malay version of CUSES (CUSES-M), is a valid and reliable instrument to measure self-efficacy towards condom use in the STD/HIV population. This tool can be used for research and clinical practice in the Malay speaking population to assess and promote safe sexual practice among STD and HIV patients.

## ACKNOWLEDGEMENTS

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