Exploring the Dimensions of Filipino College Students' Condom Use-Self Efficacy Beliefs

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Abstract

This study explores the dimensions of Filipino college students' condom use self-efficacy beliefs using the Condom Use Self-Efficacy Scale (Bradford and Beck, 1991). There were Five-hundred eighty (N=580) college students participated in this study. Exploratory and confirmatory factor analysis was conducted to explore and test the derived factor structures. The exploratory factor analysis results revealed four dimensions: Partner's Pleasure, Sexual Prejudices, Appropriation, and Assertiveness. This structure was later collapsed into a better fitting 3-factor model. The results also indicate how Filipino college students' condom use self-efficacy beliefs have shown similarities and differences with the models found in literature.

Keywords: *self-efficacy, condom use, Filipino, social cognitive theory*

A number of studies suggest that young Filipinos are experiencing some sort of a sexual debut in the recent years. The Young Adult Fertility Studies (UPPI, 1994; 2002 as cited in Raymundo & Cruz, 2004) reported an increasing prevalence of premarital sex and risky sexual behaviors among Filipinos aged 15-27 years old. Similarly, records from the Department of Health registry showed that Filipinos ages 15 up to 24 accounted up to 46% of new HIV infections in 2010 (Department of Health, 2010, Lucea et al., 2010). Interestingly, despite these well-published facts and government efforts against sexually transmitted diseases and HIV, the use of condoms for protective purposes remains very low among Filipinos (UPPI, 2002, Manalastas, 2006).

This incidence of low condom use can be attributed to many factors. These are sociological and structural factors such as sexual cultural norms, the anti-condom stance of the Catholic Church and the lack of comprehensive sex education are often cited to have stigmatized condom use among Filipinos (Manalastas, 2009). Some psychological explanations, usually in the form of attitudes, were also forwarded by Laguna (2004) and Manalastas (2005, 2006), although these were not shown to be robust predictors of condom-use.

Condom Use Self-Efficacy

With the more recent advances of psychological theories on human cognition such as that of Bandura's Social Cognitive Theory (1998), new avenues are opened to better understand sexual behaviors, specifically, condom use. Social cognitive theory asserts that a person's beliefs in his/her ability to succeed in specific situations determine his/her behavior, goals, task strategies and performance. From a health education perspective, these beliefs, which we refer to as *self-efficacy beliefs* are important cognitions that determine intentions, actions and changes in health behaviors (see Strecher, 1986); thus, measuring and understanding them is of great educational value for prevention and health promotion initiatives.

Condom use self-efficacy is defined as the individuals' perception on his/her ability to use condoms for protective purposes under a variety of circumstances (Brien, et al., 1994). Various studies have demonstrated the relationships between condom use self-efficacy and other constructs. Condom use self-efficacy is related to perceptions of susceptibility to HIV/AIDS (Mahoney et al., 1995), self-esteem, better partner communications, drug problems (Sterk, et al., 2003), communicative coping styles (Cromwell & Emmers-Sommer, 2000), actual condom or contraceptive use (Asante & Doku, 2010, Fernandez-Esquer, et al., 2010, Bassen-Engguist & Parcel, 1992), and other protective behaviors (Wang et al., 2003).

As a construct, condom use self-efficacy has also been operationalized in many ways. For example, Baele et al. (2001) reported six dimensions of condom use self-efficacy among adolescents. Bassen-Engguist and Parcel (1991) developed their own condom-use self-efficacy scales in investigating HIV-related sexual risk behaviors. Bradford and Beck (1991), as supported by further studies of Brien et al. (1994) have reported four dimensions of condom use self-efficacy. These studies suggest that there seems to be no consensus on the definite multidimensional structure of the construct. In this paper, we attempt to widen our understanding of the structure of condom use self-efficacy beliefs among Filipino college students. We had explored the different latent dimensions of their beliefs using the Condom Use Self-Efficacy Scale (CUSES) of Bradford and Beck (1991).

Studies on the Condom Use Self-Efficacy Scale

Among the various measures of condom use self-efficacy, perhaps the most studied is the CUSES developed by Bradford and Beck (1991). The scale, which was originally designed for American college students, has 28 item indicators. Psychometric studies of the CUSES point to evidence of internal consistency (Bradford and Beck, 1991, Barkley & Burns, 2000) and discriminant validity (Brien et al., 1994). However, studies on the construct validity, as evidenced by statistically supported latent dimensions of the scale have yielded different results. Brien, et al. (1994) who first conducted a principal components analysis of the scale reported four components: *mechanics, assertiveness, partner disapproval* and *intoxicants*. Using the same method on Ghanian college students, Asante and Doku (2010) derived four components: *appropriateness*, *assertiveness*, *pleasure and intoxicants,* and *STD* (Sexually Transmitted Diseases). In a different approach, applying the maximum likelihood exploratory factor analysis, Barkley and Burns (2000) conducted their studies with multi-culturally diverse college students reported three factors: *appropriation*, *STD,* and *partner reaction*. Both Asante and Doku (2010) and Barkley and Burns (2000) attribute the differences on the structure to differences of cultural perspectives. It is important to note that the methods used by these researchers are limited and exploratory in nature, and thus were not tested statistically. Table 1.0 shows the details of the differences of the dimensions derived.

Table 1.0
Comparative Description of the Different Dimensions of CUSES

Authors	Dimension	Description	Items
Brien et al.., 1994	Mechanics	Putting a condom on self or other;	1, 27, 14, 22
	Partner Disapproval	Use of a condom with a partner's approval;	9, 10, 16, 17, 18
	Assertiveness	Ability to persuade a partner to use a condom	4, 5, 6
	Intoxicants	Ability to use condoms while under the influence	24, 25, 28
Asante and Doku, 2010	Appropriateness	Indicative of self-efficacy related to multifaceted appropriate condom use skills by self or a partner	8, 14, 20, 21, 27
	Assertiveness	Ability to persuade a partner to use a condom	4,5,6
	Pleasure & Intoxicants	Ability to use condoms while under the influence	23, 24, 25
	STD	Fear of sexually transmitted diseases	16, 17, 18
Barkley and Burns, 2000	Appropriation	Perceptions on the ability to acquire & use condoms	1,2,3, 14
	STD	Fear of sexually transmitted diseases	16, 17, 18
	Partner Reaction	Considerations of partner's feelings about condom use	9,10, 15

Similar factors or dimensions can also be observed across these studies. The *"Assertiveness"* dimension is both reported by Brien, et al. (1994) and Asante and Doku (2010) while "*STD*" was reported by Asante and Doku (2010) and Barkley & Burns (2000). Both Brien, et al. (1994) and

Barkley and Burns (2000) made references to the role of partners in condom use self-efficacy; similarly, Brien, et al. (1994) and Asante and Doku (2010) referred to the role intoxicants in the construct. These studies also reported a number of items that are not classified in the identified factors.

The Present Study

Existing literature showed that condom use self-efficacy is a multidimensional construct. Studies on CUSES and other similar scales support this perspective. In this study, we had explored the multidimensional character of condom use self-efficacy beliefs of Filipino college students. Our approach begins with a factor extraction through exploratory techniques and further testing or confirming these factors through confirmatory factor analysis. This approach allows us to test the model-data fit of the derived factor structure. Specifically, we pursued to answer the following questions:

1. What are the latent dimensions of Filipino college students' condom use self-efficacy?
2. Do these latent dimensions exhibit a more parsimonious fit?

Method

Six hundred (600) Filipino college students initially participated in this study. Only 580 (96.67%) successfully completed the CUSES of which 425 (73.27%) were female and 155 (26.72%) were male. The Median age is at 20 years old, the youngest is 17 and the eldest is at 29. To facilitate our analysis, the data were split into two sets. The first set, which was used for the exploratory factor analysis involved 290 samples, and the second set, which was used for the confirmatory factor analysis involved 290 samples.

The student participants were chosen in clusters (classes) and were given information about the study consistent with the protocol agreed by the college and the researchers. Students were given a free choice to participate in the study. Those who participated were asked to fill-out consent forms, which contained the purposes and information about the study. A research assistant also explained the purpose of the study and confidentiality policies that were strictly observed.

The full version of the CUSES was administered to the participants. The CUSES, which is composed of 28 items, requires participants to answer each item in a Likert-type scale using responses that ranged from "Strongly Agree" to "Strongly Disagree". There are also seven negatively stated items

(items 8-10, 15-18) and these were reverse coded in our data encoding procedure. The items also appeared in the same order as they were in the original questionnaire. In accordance with pre-established protocols, the participants were encouraged to give truthful answers and were assured of the confidentiality of their individual responses.

Exploratory and confirmatory factor analysis techniques were used to analyze the data. The first set of data was used for maximum likelihood exploratory factor analysis (EFA) with varimax rotation using *factanal* package of R. Initial factors were extracted using the Kaiser Rule (extract only factors whose eigenvalue >1.0). To achieve a simple factor structure, the following conventional designation rules were used: 1) only items with factor loadings > 0.5 are assigned to the extracted factors, and 2) only factors with 3 or more items are retained.

The second set of the data was used for model testing using maximum likelihood confirmatory factor analysis (CFA) techniques and model-data fitting procedures. The *lavaan* (latent variable analysis) package in R was used for this purpose. We allowed latent variables to correlate, but we also checked for negative or high correlations. We also did not allow for additional within-factor error covariance. We used the Chi-square test, Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMR) fit indices to evaluate model fit.

Results

Exploratory Factor Analysis

In exploring the dimensions of Filipino college students' condom use self-efficacy, our analysis had converged at having 4 distinct dimensions or factors. Labeled as *Partner's Pleasure*, *Sexual Prejudices*, *Appropriation*, and *Assertiveness*. Table 2.0 shows the descriptions and item details of the different dimensions. The results of our analysis yielded a shorter form of the CUSES as many items did not load well with the derived factors. In total, there are only 14 items retained to constitute the extracted factors in our data.

Table 2.0
Exploratory dimensions of Filipino college students' condom use self-efficacy

Dimension	Description	CUSES Items
(F1)Partner's Pleasure	Considerations of partner's pleasure or satisfaction about condom use	20, 21, 22, 23, 27
(F2)Sexual Prejudices	Perceptions indicating confidence against issues such as sexually transmitted diseases/homosexuality	16, 17, 18
(F3)Appropriation	Perceptions on the ability to acquire & use condoms	1,2,3
(F4) Assertiveness	Ability to persuade a partner to use a condom	4,5,6

Confirmatory Factor Analysis

Initial confirmatory factor analysis of the 4-factor model resulted to a poor fit. The $\chi 2(71, N=290) = 157.101$, $p<0.05$; and the following indices $\chi 2$ /df = 2.21, TLI=0.95, RMSEA = 0.07, p-close=0.04 did not meet the criteria. Only CFI=0.96 and SRMR=0.47 indicated an adequate fit. Figure 1.0 shows the various standardized parameter estimates of the 4-factor structure model.

Figure 1.0 The 4-Factor Model with standardized parameters.

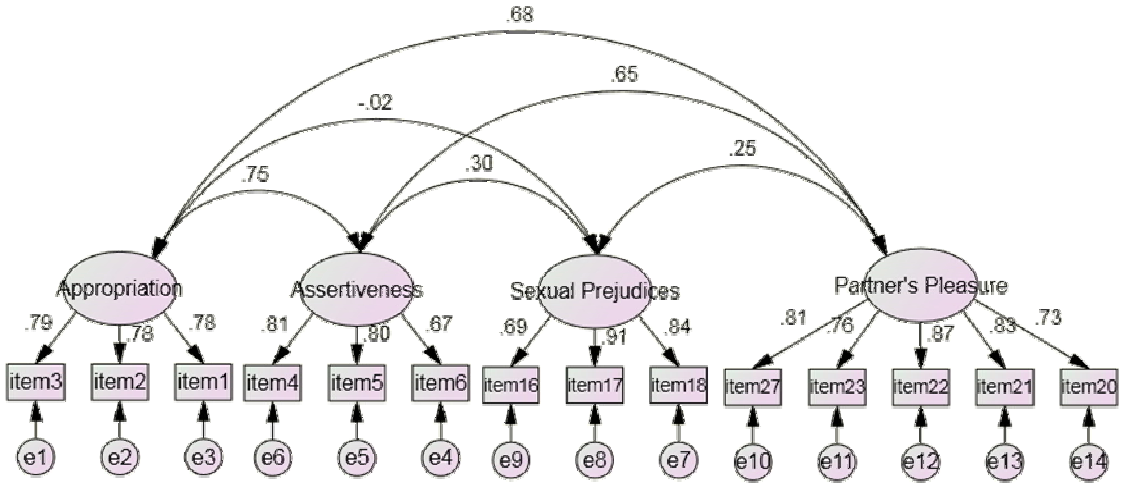
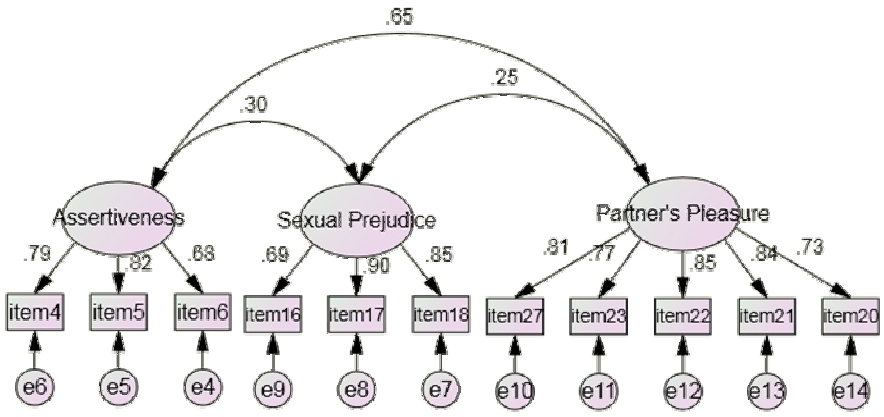


Figure 2.0 The 3-Factor Model with standardized parameters.



To improve model fit, we had examined the various parameters, modification indices and combinations of the different factors and items. We decided to drop the *Appropriation* factor because its covariance with other factors is a threat to discriminant validity. *Appropriation* is highly correlated and shares large covariance with *Assertiveness* and a negative covariance with *Sexual Prejudices*. In addition, *item 1* in *Appropriation* has also the lowest EFA factor loadings among the different items; it is also worded in a manner that does not seem to agree with the other two items within the dimension. We surmised, that if we remove *item 1* from this dimension, we would have to eventually remove *Appropriation* too, because its item indicators is deemed too few.

As a result, we collapsed the structure into a simpler 3-factor model. This is shown in Figure 2.0. Confirmatory factor analysis with this structure indicated a relatively better fit. The indices $\chi 2$ /df = 1.98, CFI=0.98, TLI=0.97, RMSEA = 0.25, p-close=0.25 and SRMR=0.42 suggest an improved model; however, $\chi 2(71, N=290) = 79.101$, $p<0.05$ still shows some inadequacy in model-data fit. Table 3.0 shows a comparison of the fit indices between the two models.

Table 3.0
Comparison of fit indices between the 4-Factor and 3-Factor Model

Fit Indices	Criterion for Good Fit	4-Factor Model	3-Factor Model
Chi-square/df	< 2.0	2.21	1.98
p-value	> 0.05	0.00	0.00
CFI	>.95	0.96	0.98
TLI	>.95	0.95	0.97
RMSEA	< 0.06	0.07	0.05
p-close	> 0.05	0.04	0.25
SRMR	< 0.8	0.47	0.42

Discussion

Our goal was to explore the dimensions of Filipino college students' condom use self-efficacy beliefs. The key results in our study suggest that these beliefs have either four or three dimensions. The extracted dimensions provided additional empirical evidence on the multidimensional character of the construct as found in the literature. Our findings also point to the 3-factor structure as the better fitting model for Filipino college students. While our findings reveal some similarities in condom use self-efficacy factor structure, the models we derived did not entirely replicate the 3 or 4-factor models of the earlier studies of Brien et al. (1994), Barkley and Burns, (2000) and Asante and Doku (2010).

Initially, we derived four condom use self-efficacy beliefs dimensions. The first dimension, labeled as *Partner's Pleasure*, represents a set of beliefs about affecting the partner's pleasure or satisfaction if condom is to be used during sexual activity. This dimension is different from the *Partner's Disapproval* dimension of Brien et al. (1994) and *Partner's Reaction* by Barkley and Burns (2000 because the latter dimensions did not dwell much on giving pleasure or satisfaction to a partner. A careful inspection of the items in this dimension shows notions of foreplay, sensation, mood, and success. This may also mean that at a more negative level, condoms are perceived to be inhibitors of pleasure and satisfaction. In totality, the items reveal a set of cognitions about giving pleasure and satisfaction to a sexual partner when using condoms.

The second dimension, *Sexual Prejudices*, this is a set of beliefs that center on one's cognition against issues of sexually transmitted diseases and/or homosexuality on condom use; this dimension is the same to that of the STD factor reported by Asante and Doku (2010) and Barkley and Burns (2000). However, we choose not to use the STD label because "*item 3" (which is about homosexuality)* does not directly specify sexually transmitted diseases as a source of one's belief. We took note that the items represent certain prejudices about why people use condoms. These beliefs or prejudices about the critical issues of homosexuality or sexually transmitted diseases are important cognitions that linger behind the decision to engage in an actual sexual experience with condoms. The formation of prejudiced beliefs would likely result to failure to use condoms or to engage in a sexual activity with a partner. Moreover, it is interesting to note that as the items in this dimension are all negatively stated, the participants are therefore not directly indicating their fears on these issues but are instead showing their confidence.

The third dimension, *Assertiveness,* replicates the findings of Brien et al. (1994) and Asante & Doku (2010). *Assertiveness* refers to a set of beliefs about conveying or convincing a partner about condom use. This dimension implies a level of comfortable communication with their respective partners

about sex in general and condom-use specifically (Lucea et al.., 2010). It also suggests that a certain level of communicative assertiveness may be necessary for convincing new sexual partners on using condoms as reflected in *items 4* and *5*. It also highlights the role of effective partner communication in using condoms as protective devices. In totality, the dimension represents a set of cognitions about an individual's ability to communicate with a partner about their sexual activities, more specifically about condom use.

The last dimension, *Appropriation,* represents the set of beliefs about acquiring and using condoms. A similar dimension was also reported by Barkley and Burns (2000), although they reported *item 14* of CUSES in this factor, which we did not generate. This dimension was dropped in favor of our 3-factor model because it does not contribute quite well to the model-data fit. An inspection of the items in this dimension further reveals that the items do not reflect a common idea that would represent a particular set of cognition related to condom use. *Item 1* seems to reflect a more general belief, while *item 2 and 3* represents cognitions which may not directly result to condom use but on other more proximate actions, such as acquisition of condoms. We think that the lack of meaningful cohesiveness between the items on this dimension resulted to high covariances and initially mediocre EFA factor loadings.

Our results also indicate that the three-factor structure is a more parsimonious model of Filipino college student's condom use self-efficacy beliefs than that of the four-factor model. This simpler and more concise structure captures the sets of cognitions about partner pleasure, sexual prejudices and partner communication; it also corroborates with the findings of Lucea et al. (2010) who examined the different qualitative contexts of condom use among young adults in the Philippines. Lucea et al. (2010) identified themes relating to partner relationship (among married and unmarried) and communication; cultural contexts such as promiscuity, prostitution, and condom related fears are strikingly similar to the sets of beliefs conveyed by the three-factor model.

On the other hand, while the three-factor model was able to confirm similar dimensions reported by previous researchers, it failed to support the existence of dimensions such as "*Mechanics*", *Intoxicants* (Brien et al., 1994), and *Appropriateness* (Asante & Doku, 2010). We believe that this can be due to the cultural backgrounds of the participants as as Asante and Doku (2010) and Barkley and Burns (2000) have claimed. Thus, it is important to note that the present study provides only for a unique insight into the aspects of condom use self-efficacy in a young Filipino population whose cultural background differs to that with the population the other studies.

We also think that the CUSES itself is limited in scope and may not have totally captured the dimensions of the construct that can be validated in a cross-cultural setting. It means that while the present study was not able to replicate some dimensions, we are not discounting the possibility that

Filipino college students may hold other beliefs in other equally related dimensions. We believe that qualitative studies similar to that of Lucea et al. (2010) could enrich the content of CUSES and other condom-use self-efficacy measures. Thus, future studies may benefit well on focusing indigenized contexts of the items in exploring and testing other possible dimensions of condom-use self-efficacy

Conclusions

The Filipino college students' condom use self-efficacy beliefs are likely to have four or three dimensions. This structure contributes to the increasing evidence of the multidimensionality of condom use self-efficacy beliefs. The derived dimensions of Filipino college students' condom use self-efficacy beliefs are *Partner's Pleasure*, *Sexual Prejudices*, *Appropriation*, and *Assertiveness*. Our findings also suggest that a 3-factor structure is the better fitting and more parsimonious model.

The derived factor structure also shows both similarities and dissimilarities with the studies of Brien et al.., (1994), Barkley and Burns (2000) and Asante and Doku (2010). We think that this could be due to differences in samples, which also suggest some possible issues with the CUSES as a tool. It is also possible for Filipino college students to have beliefs in other important dimensions that were not derived in our study. We suggest further studies on these dimensions, especially on cross-cultural settings. Nevertheless, our study contributes to the understanding of important aspects of condom use self-efficacy in a population that is different from the other population used by studies cited in this paper.

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