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Effectiveness of A Theory-based Health Education Module in Improving Self-Efficacy on Condom Use among People Living with HIV

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SUMMARY

This theory-based education module has a positive effect on increasing PLHIV's self-efficacy in condom use in compared to the standard care provided. The *Intention to Treat* (ITT) model demonstrates a significant difference in increasing self-efficacy in condom use both within and between groups. Even after three months of follow-up, the increase in self-efficacy on condom use was sustained. Nevertheless, the module can be used as a preventive measure against HIV reinfection and STIs that may worsen morbidity and mortality among PLHIV, particularly those who are sexually active (1). Otherwise, the module is a relatively simple, quick, and non-invasive technique.

Keywords

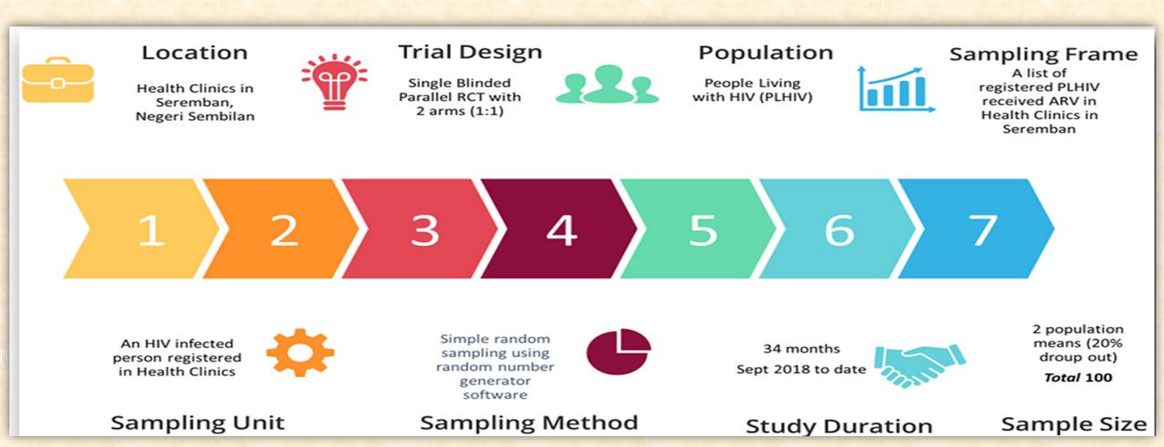
Self-efficacy; Sexual Transmission Infection; Condom use; People living with HIV, Malaysia

INTRODUCTION

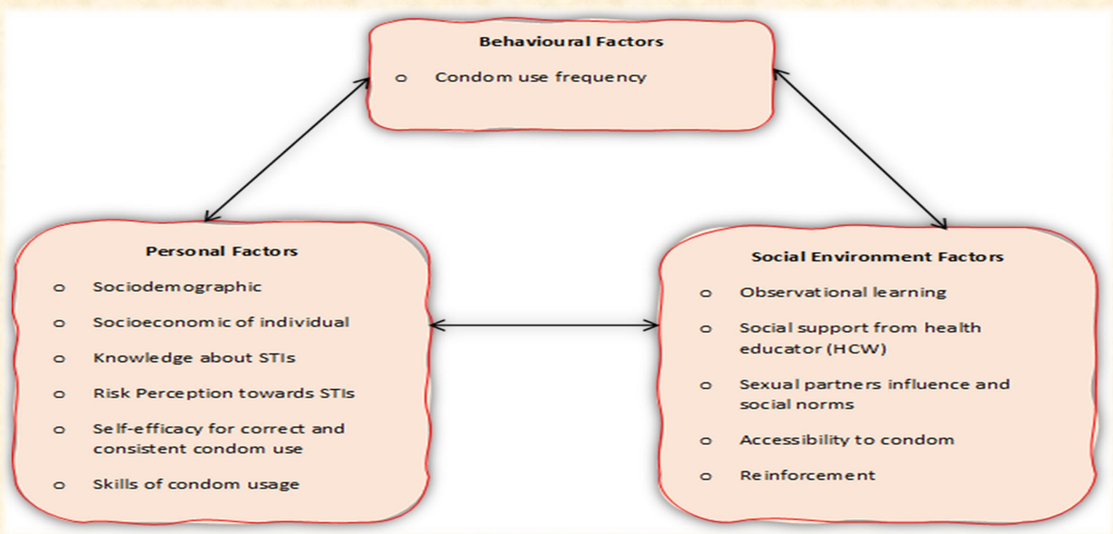
Malaysia's HIV epidemic trend has shifted to increasingly more sexual transmission than injecting drugs to 90% of the annual total in 2018 (2). It is reported that the surge was resulted from poor adherence to condom use among PLHIV and lacking health program related to sexual transmission infection (STI) preventions that focusing on PLHIV (3). Hence, the study is needed to determine the effectiveness of the health education intervention to improve self-efficacy on condom use among PLHIV.

MATERIALS & METHODS

A single-blinded, parallel randomised controlled trial was conducted in Seremban district. Sexually active HIV-infected person attended health clinics in Seremban was recruited in the study. The sample size (n) in this study was calculated using the two population means formula, with an additional 20% dropout rate given the total final sample size was 100.



Participants in the control group received standard care, while the intervention group received an additional Health Education Module based on Social Cognitive Theory (SCT).



HEALTH EDUCATION MODULE BASED ON SOCIAL COGNITIVE THEORY (SCT)

Social Cognitive Theory (SCT) Model	SCT CONSTRUCT	INTERVENTION METHOD	INTERVENTION STRATEGY
Personal Factors	o Knowledge about STIs o Risk Perception towards STIs o Self-efficacy for correct and consistent condom use o Self-efficacy for overcoming barriers	o Provide knowledge about HIV/STIs transmission, risks of unprotected sex, safe its complications to oneself or partners, safe sex practice (condom use) and correct method / steps on condom use. o Develop self-efficacy by increasing the confidence in one's ability to pursue condom use by practising in small steps and role modelling. o Develop self-efficacy by increasing the confidence in overcoming barriers while performing a given behaviour	o The respondents were given health education through a seminar and an open discussion, brainstorming and video presentations to further strengthen their understanding and participations. o Sharing sessions related to safer sex behaviours or sexually transmitted diseases, correct method of condom use and to the barriers they feel towards condom use. o The practical session related to correct method and negotiation skill in overcoming barriers were done and repeatedly many times.
Social Environment Factors	o Observational learning o Social support from health educators (HCW) o Sexual partners influence and social norms o Accessibility to condom o Reinforcement	o Learning through observing outcomes of others' behaviours (Peer role model video) o Learning on how one perceives and interprets the environment around oneself (assisted by health educator HCW)	o They were given verbal reinforcement with video presentation link), providing training and guidance in sexual risk reduction behaviour. o Besides, participants approached behavioural change (condom use and negotiation skills) in small steps to ensure success and not overwhelm them. o The participants can reflect what the specific desired changes and their goals are.
Behavioural Factors	o Negotiation skill to use condom o Skills of condom use	o Provide skill to perform a behaviour by correct method on condom use skills and negotiation skill building for condom use.	o They were asked to response with some scenarios given to them and asked them to overcome the situation by applying of the knowledge and skills that have been taught during the previous sessions.

Follow up was done at first and third months to measure the changes of self-efficacy on condom use. An intention to treat analysis was conducted as the primary analysis, and the Generalised Linear Mixed Model (GLMM) was used to assess the overall effects of the intervention. All data were analysed using the IBM Statistical Package for Social Science (SPSS) version 25.

RESULTS & DISCUSSION

100 hundred PLHIV were finally selected to participate in the study, with 50 in each of the two groups. All of the participants in the intervention (100%) and control groups (100%) had attended their respective health education and scheduled standard care sessions. The response rates for the intervention and control groups at 1-month follow-up and 3 month follow-ups were 90.0 and 86.0%, respectively.

Table 1. Baseline sociodemographic and sexual characteristics (n=100)

	Group median (IQR) / n (%)		*Statistical Test* *P*-value	
	Control	Intervention		
Age (years)	31.00(14)	33.5(13)	1096.50φ	0.29
Household Income(RM)	2500(2800)	1850(1800)	1046.50φ	0.16
Male	41(82.0)	35(70.0)	2.07β	0.35
Female	6(12.0)	9(18.0)		
Transgender	3(6.0)	6(12.0)		
Ethnicity				
Malay	36(72.0)	36(70.0)	1.00β	0.91
Chinese	5(10.0)	3(6.0)		
Indian	6(12.0)	8(16.0)		
Others	3(6.0)	4(12.0)		
Mode of Sexual Transmission				
Heterosexual	16(32.0)	24(48.7)	2.68β	0.26
Gay	27(54.0)	21(42.0)		
Bisexual	7(14.0)	5(10.0)		
Sexual Partner/s				
Spouse or Lovers	21(54.0)	23(46.0)	2.09β	0.35
Casual Partner	24(48.0)	18(36.0)		
Sex workers or paid for sex	5(10.0)	9(18.0)		
Multiple Partners				
No	17(34.0)	25(50.0)	2.63β	0.11
Yes	33(66.0)	25(50.0)		
Condom use frequency	3.00(2.0)	3.00(2.0)	1122.50φ	0.36
STI				
No	20(40.0)	19(38.0)	0.042φ	0.84
Yes	30(60.0)	31(63.0)		

βx2 Chi-squared Test, φU Mann-Whitney Test, STI: Sexual Transmission Infections

At baseline, the characteristics of sociodemographic, sexual history and mean of self-efficacy on condom use, shows no significant difference between groups. Besides, there was significant improvement of self-efficacy on condom use in intervention group as compared to the control at the first- and third-months follow-up. In the GLMM analysis, receiving the module is associated with improved self-efficacy on condom use (β = 13.08, 95% CI= 9,230, 16.934).

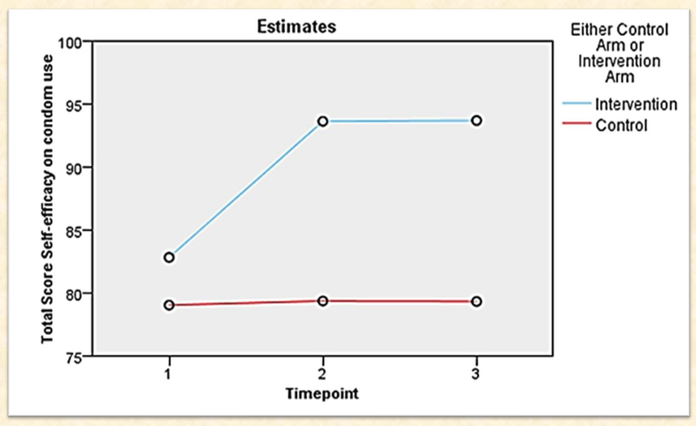


Figure 1. Interaction Plot between Group and Time Point for Self-Efficacy on Condom Use

From the baseline to the first- and third-month follow-up, the intervention group improves more than the control group in total self-efficacy scores on condom use. The adaptation of SCT in this module can provide those in the intervention group with a proper cognitive process to change for better self-efficacy in condom use (4). Furthermore, the method used to deliver intervention content to participants may increase the participant's interest in fully cooperating during the intervention. They were becoming more aware of and knowledgeable about HIV and STIs (5). A sensitivity analysis was also performed and shows that the effects of the group on the outcome variables remained significant.

Table 2. Comparison of fixed coefficients for the group, with and without

Variable	Intention to treat		Per-Protocol Analysis		Coefficient difference	Percentage coefficient difference
	Coefficient	Sig.	Coefficient	Sig.		
Self-efficacy on condom use						
Intervention	13.082	<0.001	14.365	<0.001	-1.283	-9.81
Control	1		1			

*Significant at p ≤ 0.05

CONCLUSION

This module positively affects PLHIV's self-efficacy on condom use. Thus, adding this module on standard care is beneficial among PLHIIV who is sexually active to prevent HIV reinfection and other STIs.

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