PLAY, LEARN, DECIDE:
A GAMIFIED APPROACH TO SEXUAL AND REPRODUCTIVE HEALTH EDUCATION FOR MALAYSIAN BOYS



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INTRODUCTION

Early initiation of sexual activity among Malaysian adolescents remains a public health concern, with approximately one-third reporting sexual engagement before the age of 14.[1]

OBJECTIVE

This study evaluated the effectiveness of a gamified sexual and reproductive health (SRH) education intervention, *ReReki*, in reducing early sexual risk behaviours among Malaysian adolescent boys.

METHODOLOGY

Study Design
A quasi-experimental study

Study setting
Southern region of Sarawak involved 12 schools

Sampling & blinding procedure
Multistage sampling & blinded

Instrument
Self-administered questionnaire

Participant & eligibility
Adolescent boys (13-17 years old) Able to read and write in Bahasa Malaysia.

Data Analysis
Statistical assumptions were tested prior to descriptive analysis, independent t-test and Repeated Measures ANOVA

Study Period
April 2023 - December 2024

Module development & gamified
A gamified *ReReki* module was developed by using the ADDIE model, along with the Theory of Planned Behaviour

Study Ethics
Written permission from the Director of Ministry of Health and NMRR approval. NMRR ID-22-00010-DIT and Ministry of Education KPM. 600-3/2/3-eras (12839).

Data Management
IBM SPSS version 26.0

RESULTS

The average ages of the participants was 15.23 (1.25). The majority of student were at the age of 16 years old and the school located at southern region of Sarawak. This study revealed that 8.6% of adolescents ever engaged in sexual activity as early as at 13 years old. Meanwhile 6.2% of them experienced oral sex and 1.9% experienced anal sex.

Characteristics	Intervention *n* (%) *n* = 130	Control *n* (%) *n* = 127	Mean (SD) N = 257
Age:			15.23 (1.25)
13 years old	15 (11.5)	20 (15.7)	
14 years old	13 (10.0)	21(16.5)	
15 years old	39 (30.0)	26 (20.5)	
16 years old	38 (29.2)	44 (34.6)	
17 years old	25 (19.2)	16 (12.6)	
Race:			
Dayak	74 (56.9)	57 (44.9)	
Malay	51 (39.2)	54 (42.5)	
Chinese	2 (1.5)	11 (8.7)	
Indian		2 (1.6)	
Others	3 (2.3)	3 (2.4)	
School location:			
Lundu		34 (26.8)	
Bau		28 (22.0)	
Kuching	56 (43.1)	65 (51.2)	
Serian	56 (43.1)		
Sri Aman	18 (13.8)		
Smoking			
Yes	74 (56.9)	66 (52.0)	
No	56 (43.1)	61 (48.0)	
Drinking alcohol			
Yes	60 (46.2)	48 (37.8)	
No	70 (53.8)	79 (62.2)	
Seen porno videos			
Yes	127 (97.7)	119 (93.7)	
No	3 (2.3)	8 (6.3)	
Masturbate			
Yes	110 (84.6)	100 (78.7)	
No	20 (15.4)	27 (21.3)	
Ever had a romantic relationship		77 (60.6)	
Yes	87 (66.9)	50 (39.4)	
No	43 (33.1)		
Having Sex:			
Yes	15 (11.5)	7 (5.5)	
No	115 (88.5)	120 (94.5)	
Oral sex:			
Yes	10 (7.7)	6 (4.7)	
No	120 (92.3)	121 (95.3)	
Anal sex:			
Yes	3 (2.3)	2 (1.6)	
No	127 (97.7)	125 (98.4)	
Sex debut:			
13 years old	1 (0.8)		
14 years old	5 (3.8)		
15 years old	4 (3.1)	1 (0.8)	
16 years old	3 (2.3)	6 (4.7)	
17 years old	2 (1.5)		
No experience	115 (88.5)	120 (94.5)	

CHANGES OF SEXUAL INTENTION

The effect of a gamified *ReReki* SRH education on sexual intention for pre-marital sex was significant at the <.05 level, F (2, 2) =4.35, p-value 0.013, partial Ⴄ2 = 0.037 (small effect).

CHANGES OF SELF-EFFICACY

The effect of a gamified *ReReki* SRH education on self-efficacy on performing sexual activity was significant at the <.05 level, F (2, 2) =31.23, p-value 0.000, partial Ⴄ2 = 0.210 (large effect).

CHANGES OF SOCIAL NORMS

The effect of a gamified *ReReki* SRH education on social norms on pre-marital sex was significant at the <.05 level, F (1.92, 1.92) =33.95, p-value 0.000, partial Ⴄ2 = 0.104 (large effect).

CHANGES OF PERMISSIVE ATTITUDES

The effect of a gamified *ReReki* SRH education on permissive attitude towards pre-marital sex was significant at the <.05 level, F (2,2) =6.45, p-value 0.002, partial Ⴄ2 = 0.048 (small effect).

CHANGES OF KNOWLEDGE

The effect of a gamified *ReReki* SRH education on knowledge was not significant at the >.05 level, F (1.86, 1.88) =0.38, p-value 0.67, partial Ⴄ2 = 0.003.

DISCUSSION & CONCLUSION

- Potential reasons for the initial increase in sexual intention after the intervention could be related to adolescent boys' high level of curiosity and opportunity to have an open conversation about sexual with the researcher.[2]
- Sexual health topics have long been taboo in Malaysian culture and are considered indecent topics among children and adolescents. Nevertheless, in this study, the *ReReki* intervention may have intensified their sexual interest
- These findings were most likely due to information delivered in this intervention which was presented in an interesting and engaging manner through games.
- Large effect of the intervention on self-efficacy likely resulted from the delivery of the gamified approach and module provided
- Effect of the intervention on subjective norms scores probably resulted from the delivery of the gamified and module supplied that participants find the activities entertaining and were eager to play games that openly and directly discussed male reproduction and sexuality
- Sexuality and reproduction are often viewed as serious topics that should be avoided, but when respondents are presented with information that is game-oriented, their perception shift to one of enjoyment. Additionally, the information from *ReReki* intervention programme was able to change participants' perception of the benefits of sexual and reproductive health and their ability to control perceived pressure of social norms of discourage pre-marital sex among adolescents

Adolescent boys in this study performed sex at the age of 13 years old and experimenting the anal and oral sex. To mitigate risky sexual behaviour, *ReReki* intervention is partially successful in reducing adolescent boys self-efficacy and social norm towards pre-marital sex. Thus, the theory-driven, gamified ReReki intervention effectively modified behavioural determinants associated with early sexual engagement, supporting its potential for implementation in school and community based SRH programmes

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