
The Effect of Pre-Marital Explorer Game towards Adolescents' Knowledge Regarding Pre-Marital Sex behavior

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Abstract

This study aimed to identify knowledge level of adolescent regarding premarital sex behavior and examine effect of Pre-Marital Explorer game on adolescents' knowledge about pre-marital sexual behavior. Population sample in this study was adolescents in Jambi, Indonesia. This study used the Pre Experimental method with the design of One Group Pretest-posttest. The sampling technique was the quota sampling method with 765 respondents. The tools in this study were the premarital explorer game and questionnaire to measure the effectiveness of the game and its effects on respondents' knowledge. The results showed that most teenagers had less knowledge about premarital sexual behavior before Pre-Marital Explorer game media introduced. The participants found that game could be as valuable as learning in school without realizing that it is a designed-game for learning premarital sex behavior and to make them understand how to overcome the premarital sex behavior. The premarital explorer could improve adolescents' mental capacities to deal with premarital sexual behavior. Hence, Pre-Marital Explorer proved that it positively educating students regarding premarital sex behavior. Data showed that almost all students (764) understand about premarital sex behavior from the game and their post-test score increasingly enhanced after the game.

Keywords: Pre-Marital Explorer; Game Media; Knowledge; premarital sexual behavior; adolescents.

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1. Introduction

Evidence in Indonesia indicated that 77,2% young students in SMA (Middle high school) have girlfriend/boyfriend, have experienced date, kiss (21,42%), touch sensitive body part (12,35%) such as breast, neck, and genitals and have sex (9,90%). They likely to have that behavior in young age between 16-18 years old where they still engage in school education [1]. Moreover, a study in Cebu, Philippine proved that boys and girls at the age 14-17 had experienced those sexual behaviors [2].

1.1 Premarital sex behavior

Premarital sex behavior is any activities that leads to sexual satisfaction such as vehemently kissing that leads to lust and finally departs to sexual intercourse [4]. Therefore, according to Bailey [4], the premarital sex behavior in this context are:

a. Kissing

Kissing stimulates lust and sexual desire, which is done by lips on lips, lips on cheek, and neck. All of those kissing activities are done to stimulate sexual lust.

b. Petting

Petting is an activity of touching or rubbing genitals to others to stimulate lust of oneself and sex partners.

c. Sexual Intercourse

Sexual intercourse is defined as an activity of having sexually intercourse between 2 people. It can be heterosexual and homosexual intercourse. Shek identified that adolescent attitude changed after promoting premarital sex education and 48% of them accepted abortion [5]. There are many factors of premarital sex behavior, they are:

a. Biological factor

Biological factor is a natural factor encountered by adolescent since their hormone activation as a trigger of sexual behavior.

b. Parents influence

Adolescents mostly eluding communication with their parents that emerges lack of understanding about premarital sex behavior and its negative impacts. A family sometime rarely opening discussion regarding sex that emerge misunderstanding among adolescents regarding sex behavior.

c. Peer influence

Peer is one of the most influential factors of adolescent regarding premarital sex behavior since social interaction among peer takes place intensively enables them to sharing many experiences.

d. Academic achievement

Academic achievement also affects adolescent toward premarital sex behavior. Adolescent with high academic achievement are more likely can manage themselves from premarital sex behavior as their focus on academic achievement rather than negative sex behavior.

e. Understanding

Adolescent is demanded to be mature regarding their life decision. A more understanding, more avoiding negative behavior because the adolescent understand that every action they committed always followed by responsibility.

f. Porn exposure

Porn exposure strongly influence adolescent in premarital sex behavior because as they watch porn and get addicted, it will stimulate their sexual desire that may lead them to conduct a premarital sexual behavior.

g. Understanding about religious values

Religious values are essential for preventing premarital sex behavior. A deep understanding of religious value enables adolescent to avoid any negative behavior as they comprehend the religious consequences of their deeds.

h. Personality

Personality is one of the important factors in determining adolescent behavior. A good personality adolescent has a strong self-control and self-esteem that makes them not easily driven into negative sexual behavior.

i. Lack of knowledge regarding reproductive health

Knowledge of reproductive health is important to prevent premarital sex behavior. Adolescent requires a proper sex and reproductive health education to minimize HIV/AIDS risk and save adolescent from premarital sex behavior [6-9].

Teen age is a golden age of puberty with many advantages for development and disadvantages as well. Puberty is a phase for physical, emotional and social development as it is alteration stage from children to adult [10]. However, this alteration might emerge some challenges, especially regarding sexual interest. Juvenile encounters changing in point of view regarding friendship, relationship and sexual behavior. It is a challenging and unavoidable stage to retain. Teenagers must restrict themselves to exposure of sexual behavior, especially

when they are unmarried yet. Pre-marital sex behavior is not only considered as immoral behavior in society, but also sinful behavior in scriptures. Hence, pubescent must be aware to save themselves for preventing negative behavior such as premarital sexual behavior. Premarital sex behavior is dangerous for adolescent. It can cause unwanted-pregnancy, abortion, sexual transmitted disease such as HIV/AIDS, sexual violence, etc. [9,11,12]. Therefore, various attempts have been conducted to prevent dangerous problems such as sex education curriculum and tuition. Kwan and his colleagues stated that Sexual issues are fundamentally considered as taboo in Chinese society [10]. Moreover, family discussion more likely avoiding discussion about it. Hindering discussion about sex happened in some countries such as India, China [13] and in this context, Indonesia. Moreover, a study in Hong Kong proved that there are so many underage children having sexual intercourse without understanding safe sex and limited knowledge about contraception that increasingly occurred. Thus, it forces a serious concern for educating adolescents to save themselves from destructive behavior [14]. In many countries, sex education is as important as school education. Therefore, many countries assigned sex education in their curriculum, such as in Singapore, United States, Europe, South Korea, Japan and Hong Kong. Effectiveness of sex education indubitably change people's behavior regarding sex. People more aware to practice a safer sex to minimize infection risk of sexually transmitted disease [14-15]. A study in Korea found that training sex education in school age was positively affect sexual behavior among college students in Korea. The sex education excellently affected Korean students in Primary and Junior Secondary school levels [16]. Sex education can be formulated as friendly as possible due to its aim for educating adolescent. Therefore, sex education must not be boring as conservative education, rather it must be more interesting, engaging and up-to-date. Reference [17] affirmed that simulation game effectively educating young students regarding sex behavior. Games increase communication between students, upsurge students' levels of enthusiasm, and improve their knowledge [18]. Moreover, Gilliam and his colleagues conducted an up-to-date sex education for preventing sexual violence in a narrative-based digital game and found participants' excitement and knowledge improvement regarding sexual violence [19]. Thus, testimonies confirmed that learning with game effectively affected students' knowledge and understanding. It also stimulated students' discussion and promoted their critical thinking. Game is a perfect choice for educating adolescent regarding sexual behavior. Therefore, in this study researchers designed a new game named Pre-marital Explorer that could engage students' attention in learning activity.

1.2 Pre-marital Explorer

Pre-marital Explorer Game is a new game specially created for this research intended for educating adolescent about premarital sex behavior. Due to lockdown during Covid-19 pandemic, this research was conducted virtually via online zoom meeting. This game is an adaptation of ladder snake and monopoly game. The researchers added question cards to make it more interesting and as a core of this game. This game has many questions regarding premarital sex behavior and answers from research, animated video from credible sources and recording of experts' explanation.

2. Tools

Tools required for the game are:

- a. Virtual Game Board
- b. Question Card
- c. Virtual Dice
- d. Player symbols

2. 2. Game Instruction

“Pre-Marital Explorer” can be played as follows :

- 1) This game consists of 4-6 players. One of the players is a moderator. The game is conducted via zoom application.
- 2) Moderator shares screen that displays virtual game board. Make sure all players are online and prepares question cards. Moderator controls dice.
- 3) Each player rolls the dice to determine their turn. The one gets higher number is the first player.
- 4) On the first journey, players move forward based on the number on dice they got. Moreover, players must answer questions in quiz application based on the color box they are on.
- 5) Players must answer the questions to continue their game. If the layers cannot answer the question, the player is not allowed to continue the game and stay at the same position.
- 6) If the player cannot answer the question, the other players have opportunity to take over. Yet, if no one can answer the question, moderator will open the answer. The answer is a text explanation, animation video, and explanation from experts.
- 7) Each card only has one question and one point.
- 8) This game takes place for 60 minutes.
- 9) Accumulating players' individual point.
- 10) The player with highest point is the winner.

3. Method

This study was an experimental study with Pre Experimental Design method and one group pre-test and post-test design to identify effects of Pre-Marital Explorer game towards students' knowledge in Jambi regarding premarital sex behavior. The data obtained from pre-test and post-test questioner to examine the effect of premarital Explorer game. The authors designed a questionnaire for adolescents in Jambi and distributed it via WhatsApp, line and Facebook to gain participants. Moreover, the authors provided a detailed-question in questionnaire to get the participants' number and gathered them in a telegram group to join the zoom meeting for treatment. The treatment was the premarital explorer game. Then, after playing the game, the adolescents answered the post-test questionnaire.

3.1 Inclusion and exclusion criteria

All adolescents in Jambi between 15-19 years old were eligible as respondents in this study. Many adolescents in Jambi who do not know any information regarding Premarital sexual behavior.

3.2 Sample size and population

Since title of this study was examining adolescent, the population of the study was Islamic senior high school students in Jambi with range age between 15-19 years old. In Indonesia, Senior high school is an education stage after secondary school or junior high school. It is also an alteration before entering a college or an university. The researchers distributed the google form questionnaires to all students in Jambi. However, the researchers got 765 feedbacks and responses. Therefore, those 765 responses were samples in the study.

3.3 Data collection

Data collection was carried out between June to December 2020. The authors formulated the questionnaire and distributed it to adolescent in Jambi. The questionnaire distribution in the form of link via WhatsApp and social media. The questionnaires were distributed and the authors got 765 responses.

3.4 Study tool and questionnaire content

The premarital explorer game and questionnaire were the tools for data-obtaining. Moreover, the respondents were asked to fill a structured, self-administrated questionnaire via google form. The questionnaire was formulated by authors based on on the issue in this study regarding premarital sexual behavior and their testimonial result of premarital explorer. The questions were: Premarital sexual behavior's definition, Types of premarital sexual behavior, The cause and effect of premarital sexual behavior, The prevention of premarital sexual behavior, Dangerous risks of premarital sexual behavior, function of contraception, the importance of sexual education, and comprehension about abortion.

3.5 Scoring System

Since the questionnaire consisted of several sections questions, the authors assigned different scoring systems as follow: a correct answer had 4 score and the incorrect answer had 0 score. All correct answer was equal to 100 score.

3.6 Ethical Exemption

An ethical exemption had been issued by Health Research Ethic Committee of The Health Polytechnic in Jambi for this study under the following code LB.02.06/2/117/2020. The ethical clearance declared that this study was ethically appropriate in accordance to 7 WHO standards 1) social values, 2)scientific values, 3) equitable assessment and benefit, 4)Risks, 5)persuasion/ exploitation, 6)Confidentiality and Privacy, 7)Informed concern, referring to the 2016 CIOMS guidelines. The declaration of ethics could be applied from July 24, 2020 unto July 24 2021. Written informed consent was obtained from the participants for the publication of this study. The participation was voluntary, and the respondents were informed that they could withdraw from the study at any time if they desired to do so without any penalty. Where convenient to the participant, Google Forms online platform was used to fill the questionnaire, and such forms guaranteed the participants anonymity and confidentiality by keeping each submission completely untraceable. The researchers ensured the security of hard copies and assigned a code to each questionnaire.

4. Result and Discussion

4.1 General characteristic of respondents

The total number of respondents was 765 that consisted of 423 female students and 243 male students. In pre-test section, adolescents seemed to have difficulties to answer the questionnaire due to lack of understanding regarding terms and reasons. Furthermore, adolescents were likely to be interested with pre-marital explorer game because the game was delivered with fun and easy game similar to ladder and snake. Therefore, the game was successfully played together, and the participants could get a new knowledge regarding pre-marital sexual behavior. Therefore, the data were presented below:

Table 1: Frequency of Adolescents’ knowledge regarding premarital sexual behavior

Sections	Pretest	Post-Test
Premarital sexual behavior’s definition.	725 (94.77%)	765 (100%)
Types of premarital sexual behavior	267 (34.9%)	743 (97.12%)
The cause and effect of premarital sexual behavior	413 (53.98%)	756 (98.81%)
The prevention of premarital sexual behavior	142 (18.56%)	654 (85.49%)
Dangerous risks of premarital sexual behavior	128 (16.73%)	650 (84.96%)
The function of contraception.	213 (27.84%)	567 (74.11%)
The importance of sexual education	252 (32.94%)	756 (98.81%)
A comprehension about abortion.	221 (28.8%)	678 (88.62%)
Overall knowledge	84 (10.9%)	764 (99.86%)

The table above described adolescents’ knowledge regarding pre-marital behavior. As presented in the table above, in pre-test section, from total 765 participants, almost all adolescents knew about premarital sexual behavior’s definition. Participants’ reason about premarital sexual behavior is a sexual intercourse, which is done before marriage. Moreover, in pretest, only 267 (34.9%) adolescents recognized types of premarital sexual behavior. It was different with the post-test section where 743 (97.12%) adolescents knew well the types of premarital sexual behavior. Further, 413 (53.98%) respondents did not know the cause and effect of premarital sexual behavior, then begun to understand the cause and effect of premarital sexual behavior after playing the premarital explorer with frequency of correct answer as 756 (97.12%) respondents. Pretest proved that 142 (18.56%) respondents did not understand how to prevent premarital sexual behavior, then, they became to understand how to prevent themselves from premarital sexual behavior as the post-test evidence showed that 654 (85.49%) respondents answered the questionnaire correctly. Moreover, before playing the premarital explorer game, 213 (17.84%) respondents did not know the function of contraception. Conversely, after playing the premarital explorer game, 567 (74.11%) respondents had a new knowledge about the function of contraception. Farther, only 252 (32.94%) of participants agreed about the importance of sexual education for adolescents before the premarital explorer game played. Then, almost all participants agreed that sex education was important for adolescents. Further, some of the adolescents innocently knew about abortion and its side

effects. Further, the adolescents realized the effects of abortion after playing premarital explorer game. Therefore, the improvement of adolescents' knowledge could be seen from overall sections, that before playing the game, only 84 adolescents comprehend about the premarital sexual behavior. Meanwhile, after playing the premarital explorer game, almost all adolescents (764 participants) had all knowledge regarding premarital sexual behavior.

4.2 Effectiveness of Pre-marital Explorer Game

Table 2: Effectiveness of Premarital Explorer game (N=765)

Sections	Pretest	Post-Test	post, pre test	ideal, post test	N-gain
Premarital sexual behavior's definition.	94	99	5	1	5
Types of premarital sexual behavior	34	97	63	3	21
The cause and effect of premarital sexual behavior	53	98	45	2	22.5
The prevention of premarital sexual behavior	18	85	67	15	4.466666667
Dangerous risks of premarital sexual behavior	16	84	68	16	4.25
The function of contraception.	27	74	47	26	1.807692308
The importance of sexual education	32	98	66	2	33
A comprehension about abortion.	28	88	60	12	5
Overall knowledge	10	99	89	1	89

Table 3: N-gain score range

Score range	Categories
0-10	Poor
10-20	Low
20-50	Medium
50-80	Good
80-100	Excellent

The table 3 above described adolescents' knowledge regarding pre-marital behavior. As presented in the table above, N-gain score for premarital sexual behavior's definition gain low improvement because some of adolescents had known about the definition. Moreover, the adolescents' knowledge regarding premarital sexual behavior and its types increased with low category. Besides, respondents' knowledge regarding cause and effect of premarital sexual behavior increased in low category. In addition, N-gain score for prevention proved that there was improvement of adolescents' knowledge about prevention of premarital sexual behavior. Moreover, the premarital explorer proved that the adolescents understood the function of contraception with N-gain value as 1.8 with low category. Further, the premarital explorer also improved adolescents' knowledge about sex education and its importance for adolescents. Farther, some adolescents knew the side effects of abortion with low category of N-gain value. Likewise, overall knowledge of the participants improved drastically as "Excellent" change after playing premarital explorer behavior game. Therefore, the premarital explorer game

was effectively improved adolescents; knowledge regarding premarital sexual behavior with fun and easy learning activities. Educating adolescents regarding sex is a challenging activity. Sex education is a taboo, peculiar, uncommon discussion in Indonesia and other countries [13]. Educating sexual behavior can be conducted in various ways such as peer tutoring, community activities involving parents, mass media education, school education curriculum, etc. [10,19,20]. Wagner found that sex education contributed to students' cognitive development especially regarding sexual knowledge [27]. Teenagers also improved their mental, morality, maturity and psychology [21-24]. Pre-Marital Explorer attested that participants enjoying the game without realizing that they are learning new important knowledge. They also easy to understand and enhance their knowledge. They find this game was interesting and not an educational activity. Thus, the Pre-marital Explorer is recommended for promoting sex education for adolescent as an extracurricular in school and academic requirements.

5. Point of strength

The importance of this study lies in that it focuses on adolescents' knowledge regarding premarital sexual behavior. Since sexual behavior is considered as immoral behavior, adolescents require a thorough education and learning regarding sexual education. The Premarital explorer enabled adolescent to get knowledge in a fun and easy way of learning. Moreover, this game is easy and manageable for any modifications.

6. Conclusion

As a result, the premarital explorer game is suitable for educating adolescents regarding premarital sexual behavior. Moreover, during the Pre-Marital Explorer game, the participants found that game could be as valuable as learning in school without realizing that it is a designed-game for learning premarital sex behavior and to make them understand how to overcome the premarital sex behavior. The premarital explorer could improve adolescents' mental capacities to deal with premarital sexual behavior. Hence, Pre-Marital Explorer proved that it positively educating students regarding premarital sex behavior. Data showed that almost all students (764) understand about premarital sex behavior from the game and their post-test score increasingly enhanced after the game. Thus, the data indicated that Pre-marital Explorer had positively affected adolescents' knowledge about premarital sex behavior.

Bibliography

- [1]. Ekawati YN, Saputra NE, Fadzrul F, Periantalo J. Perilaku berisiko siswa di Kota Jambi. *J Psikol Jambi*.;1(1) 2016. 3.
- [2]. Upadhyay UD, Hindin MJ. Do perceptions of friends' behaviors affect age at first sex? Evidence from Cebu, Philippines. *Adolesc Heal.*;39(4). 2006. 570–7.
- [3]. Sarwono SW. *Psikologi Remaja*. (edisi limabelas). Jakarta: PT Rajagrafindo Persada. 2012
- [4]. Bailey JM, Zucker KJ. Childhood sex-typed behavior and sexual orientation: A conceptual analysis and quantitative review. *Dev Psychol.*;31(1) 1995. p.43.
- [5]. Shek DTL, Leung JTY. Adolescent developmental issues in Hong Kong: phenomena and implications for youth service. In: *Development and evaluation of positive adolescent training through holistic*

- social programs (PATHS). Springer. 2013. p. 1–13.
- [6]. Pratiwi. *Perilaku Seks untuk Remaja*. Yogyakarta: Tugu Publisher. 2004.
- [7]. Grossman JM, Tracy AJ, Charmoraman L, Ceder I, Erkut S. Protective effects of middle school comprehensive sex education with family involvement. *J Sch Health*.;84(11) 2014. 739–47.
- [8]. Halldorsdottir T, Kristjansson AL, Asgeirsdottir BB, Thorisdottir IE, Sigfusson J, Tolgyes EMJ, et al. A multi-level developmental approach towards understanding adolescent mental health and behaviour: rationale, design and methods of the LIFECOURSE study in Iceland. *Soc Psychiatry Psychiatric Epidemiology*. 2020. p. 1–11
- [9]. Day S, Kapogiannis BG, Shah SK, Wilson EC, Ruel TD, Conserve DF, et al. Adolescent participation in HIV research: consortium experience in low and middle-income countries and scoping review. *Lancet HIV*.;7(12) 2020. p 844–52
- [10]. Chu SKW, Kwan ACM, Reynolds R, Mellecker RR, Tam F, Lee G, et al. Promoting sex education among teenagers through an interactive game: Reasons for success and implications. *Games Health Journal*;4(3) 2015. 168–74.
- [11]. Cubbins LA, Tanfer K. The influence of gender on sex: A study of men’s and women’s self-reported high-risk sex behavior. *Archive Sex Behavior*.;29(3) 2000. 229–57.
- [12]. DiIorio C, Parsons M, Lehr S, Adame D, Carlone J. Measurement of safe sex behavior in adolescents and young adults. *Nurs Res*. 1992.
- [13]. Chang Y-T, Hayter M, Lin M-L. Chinese adolescents’ attitudes toward sexual relationships and premarital sex: Implications for promoting sexual health. *Journal of Sch Nurse*.;30(6) 2014. 420–9
- [14]. Kirby DB, Laris BA, Rolleri LA. (2007). Sex and HIV education programs: their impact on sexual behaviors of young people throughout the world. *Journal of Adolescent Health*.;40(3)2007. p.206–17
- [15]. Herbenick D, Reece M, Sanders S, Dodge B, Ghassemi A, Fortenberry JD. Prevalence and characteristics of vibrator use by women in the United States: Results from a nationally representative study. *Journal of Sex Med*.;6(7) 2019. p.1857–66
- [16]. Shin KR, Park H, Cha C. Sex education during the school-aged years influences sexual attitudes and sexual health in college: A comparative study from Korea. *Nurs Health Sci*.;13(3)2011. 328–34
- [17]. Kashibuchi M, Sakamoto A. The educational effectiveness of a simulation/game in sex education. *Simul Gaming*. 32(3)2001. 331–43.
- [18]. Skinner KD. Creating a game for sexuality and aging: The sexual dysfunction trivia game. *Journal of Continuous Education Nurse*. 31 (4) 2000. 185-9
- [19]. Gilliam, M, Jagoda P, Jaworski E, Hebert LE, Lyman P, Wilson MC “Because if we don’t talk about it, how are we going to prevent it?”: Lucidity, a narrative-based digital game about sexual violence. *Sex Education*. 16(4) 2016. 391–404.
- [20]. Kwan ACM, Chu SKW, Hong AWL, Tam F, Lee GMY, Mellecker R. Making smart choices: A serious game for sex education for young adolescents. *Int J Game-Based Learn*. 5(1) 2015. 18–30.
- [21]. Denny G, Young M. An evaluation of an abstinence-only sex education curriculum: An 18-month follow-up. *J Sch Health*.76(8) 2006. 414–22
- [22]. Astle S, McAllister P, Emanuels S, Rogers J, Toews M, Yazedjian A. College students’ suggestions for improving sex education in schools beyond “blah blah condoms and STDs.” *Sex Educ*. 2020. 1–

15

- [23]. Goldman JDG. The new sexuality education curriculum for Queensland primary schools. *Sex Education*. 10(1) 2010. 47–66.
- [24]. Liew WM. Sex (education) in the city: Singapore’s sexuality education curriculum. *Discourse Stud Cult Polit Education*. 35(5) 2014. 705–17.
- [25]. Marisha R, Ilyas A. Guidance And Counseling Teacher Efforts To Address Students’ Sexual Behavior. *J Neo Konseling*. 3(1) 2020. 178–85.
- [26]. White KM, Terry DJ, Hogg MA. Safer sex behavior: The role of attitudes, norms, and control factors. *J Appl Soc Psychol*. 24(24) 1994. 2164–92.
- [27]. Wagner PA. Socio-sexual education: A practical study in formal thinking and teachable moments. *Sex Education*.;11(2) 2011. 193–211.